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# PROCEEDINGS

OF THE

# LINNEAN SOCIETY OF LONDON.

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FROM NOVEMBER 1875 TO JUNE 1880.

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LONDON:
PRINTED FOR THE LINNEAN SOCIETY,
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# PROCEEDINGS

OF THE

# LINNEAN SOCIETY OF LONDON.

## (SESSION 1875–76.)

November 4th, 1875.

Prof. G. J. **Allman**, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

Dr. P. S. M. Moodelly was elected a Fellow.

The following papers were read:—

1. "On Bees, Wasps, and Ants."—Part III. By Sir John Lubbock, Bart., F.R.S., F.L.S.
2. "On the Rate of Growth of the Female Flower-stalk of *Vallisneria spiralis*." By A. W. Bennett, M.A., F.L.S.
3. "Enumeration of Plants collected by V. Lovett Cameron, Lieut. R.N., in the Region about Lake Tanganyika." By D. Oliver, F.R.S., F.L.S.
4. "Note on a Collection of North-Celebes Plants made by Mr. Riedel of Gorontalo." By D. Oliver, F.R.S., F.L.S.

November 18th, 1875.

Prof. G. J. **Allman**, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

Joseph Henry Gilbert, Ph.D., William Paul, Esq., and James Renny, Esq., were elected Fellows.

The following paper was read:—

1. "On the Organization and Systematic Position of the Ornithosauria."—Part I. By H. G. Seeley, F.L.S., F.G.S.

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### December 2nd, 1875.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

Mr. J. G. Baker, on behalf of Mr. T. R. Archer Briggs, exhibited fruits of *Pyrus communis*, var. *Briggsii*, Syme, from the neighbourhood of Plymouth. The fruit of the Devonshire wild plant is turbinate, and not more than half an inch in length.

The Hon. David Arnot, Francis M. Balfour, Esq., George Stewardson Brady, Esq., John Buchanan, Esq., Henry Ramsay Cox, Esq., Francis Darwin, M.B., Frank Blackwell Forbes, Esq., Edward Morell Holmes, Esq., John Leckenby, Esq., J. W. H. Lush, Esq., Edward John Miers, Esq., Henry D'Arcy Power, Esq., W. D. Robinson-Douglas, Esq., George J. Romanes, Esq., Charles T. Staiger, Esq., James Stirton, M.D., and James W. H. Trail, Esq., were elected Fellows.

The following papers were read:—

1. "On the Polynesian Ferns of the 'Challenger' Expedition." By J. G. Baker, F.L.S.
2. "Revision of the Anthericeæ and Eriospermeæ." By J. G. Baker, F.L.S.
3. "Botanic Notes from Darjeeling to Tonglo." By C. B. Clarke, M.A., F.L.S.
4. "On *Edgaria*, a new Genus of Cucurbitaceæ." By C. B. Clarke, M.A., F.L.S.

### December 16th, 1875.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

Isaac Bayley Balfour, Esq., William Christopher Boyd, Esq., Alfred Craven, Esq., and James Hector, M.D., were elected Fellows.

The following papers were read:—

1. "On the Structure and Development of the Bird's Skull."—Part II. By W. K. Parker, F.R.S., F.L S.
2. "On a Sport in *Paritium tricuspe*, G. Don." By G. King, M.B., F.L.S.
3. "Supplement to the Enumeration of the Fungi of Ceylon." By the Rev. M. J. Berkeley, F.L.S., and C. E. Broome, F.L.S.
4. "Contributions to the Botany of the 'Challenger.' Notes on Plants collected and observed at the Admiralty Islands." By H. N. Moseley, M.A. Communicated by Dr. Hooker, F.R.S., F.L.S.

### January 20th, 1876.

Prof. G. J. **Allman**, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

John Henry Baldock, Esq., and G. W. Bloxam, M.A., were elected Fellows.

The following papers were read;—

1. "On a new Species of Oak from the Sikkim Himalaya." By George King, M.B., F.L.S.

2. "On some Orchidaceæ collected by Mr. Moseley, of the 'Challenger' Expedition, in the Admiralty Islands, Ternate, and Cape York; one of which forms the type of a new Section of the Genus *Dendrobium*." By Prof. H. G. Reichenbach. Communicated by Prof. Oliver, F.R.S., F.L.S.

3. "Supplement to the Enumeration of the Fungi of Brazil." By the Rev. M. J. Berkeley, F.L.S., and M. C. Cooke, M.A., LL.D.

4. "On Steere's Sponge, a new Genus of the Hexactinellid Group of the Spongidæ." By James Murie, M.D., F.L.S.

### February 3rd, 1876.

Prof. G. J. **Allman**, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

William Hillhouse, Esq., Daniel Pidgeon, Esq., David Robertson, Esq., and Edwin Ray Lankester, M.A., were elected Fellows.

Mr. Algernon Peckover, F.L.S., exhibited specimens of Insects collected in Madagascar in 1875 by Mr. Kingdom.

The following papers were read:—

1. "Note on *Boea Commersonii*, R. Br." By Henry Trimen, M.B., F.L.S.

2. "On the Geographical Distribution of the Vultures." By R. Bowdler Sharpe, F.L.S.

3. "On new British Lichens." By the Rev. W. A. Leighton, B.A., F.L.S.

4. "Lichenes Capenses et Lichenes Terræ Kergueleni; an Enumeration of the Lichens collected by the Rev. A. E. Eaton at the Cape of Good Hope and Kerguelen Land during the Venus Transit Expedition in 1874–75." By the Rev. James M. Crombie, F.L.S.

### February 17th, 1876.

J. **Gwyn Jeffreys**, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

David Douglas Cunningham, M.B., Nathaniel Clissold Tuely, Esq., Charles Marcus Wakefield, Esq., and Charles Frederick White, Esq., were elected Fellows.

Dr. Cobbold exhibited specimens of a new human fluke (*Distoma sinense*) discovered by Prof. M<sup>c</sup>Connell, of Calcutta.

The following papers were read:—

1. "Additional Observations on Ants." By Sir John Lubbock, Bart., M.P., F.R.S., F.L.S.
2. "On the Cloacal Bladders and on the Peritoneal Canals in Chelonia." By John Anderson, M.D., F.L.S.

A letter from P. C. Owen, Esq., Director of the South Kensington Museum, was read from the Chair, calling the attention of the Society to the approaching Loan Exhibition of Scientific apparatus; and requesting that any Members who might be willing to contribute, would furnish at their early convenience, on special forms, descriptions of the objects proposed to be lent.

## March 2nd, 1876.

Prof. G. J. ALLMAN, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

Before proceeding to the business of the Meeting, the President called attention to the serious loss sustained by the Society by deaths since the last Meeting, of John Joseph Bennett, F.R.S., who for twenty years had filled the office of Secretary, during great part of which time he had been the sole Editor of the Society's publications, and of M. Adolph Brongniart, one of the oldest Foreign Members of the Society.

Sir Victor Alexander Brooke, Bart., Richard Benyon Croft, Esq., Ralph Gooding, M.D., Frederick John Horniman, Esq., and W. Percy Sladen, Esq., were elected Fellows.

Mr. Carruthers, F.L.S., exhibited specimens of *Phytophthora infestans*, *Pythium vexans*, and other parasitic fungi prepared by Prof. de Bary.

Mr. Gwyn Jeffreys, V.P.L.S., exhibited a specimen of the great Felt- or Blanket-Sponge, *Askonema setubalense*, obtained on the Telegraph-cable off Cape Finisterre, on the 24th August, 1875, by Sir James Anderson.

Prof. Seeley, F.L.S., exhibited a mould of the cranium of *Ornithocheirus*, and various fragments of the skeleton.

The following papers were read:—

1. "On a new Genus of Turneraceæ from Rodriguez." By I. Bayley Balfour, D.Sc., F.L.S.
2. "On Pollen." By Michael Pakenham Edgeworth, F.L.S.
3. "List of the *Musci* and *Hepaticæ* collected in Kerguelen's Island by the Rev. A. E. Eaton, A.M." By William Mitten, A.L.S.
4. "Notes on Algæ found by the Rev. A. E. Eaton at Kerguelen's Land." By George Dickie, A.M., M.D., F.L.S.

## March 16th, 1876.

Prof. G. J. **Allman**, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

The President read a letter from Mr. Van Voorst, F.L.S., offering for the acceptance of the Society two volumes of specimens of British Algæ arranged and named by the late Prof. Harvey. The special thanks of the Society were directed to be presented to Mr. Van Voorst for this valuable donation.

Edward R. Alston, Esq., and David Blair, Esq., were elected Fellows.

The following papers were read:—

1. "On the Plastron of the Gangetic Mud-Turtle, *Emyda dura*, Buch." By John Anderson, M.D., F.L.S.
2. "On the Rate of Growth of the Flower-stalk of the Hyacinth." By A. W. Bennett, M.A., F.L.S.
3. "On the Hygroscopic Mechanism by which certain Seeds are enabled to bury themselves in the Ground." By Francis Darwin, M.B., F.L.S.
4. "On the Lichens of Antarctic America, collected by Dr. R. O. Cunningham during the Voyage of the 'Nassau.'" By the Rev. J. M. Crombie, F.L.S.

A discussion on Prof. de Bary's recent researches on the Potato disease, commenced at the last Meeting, was resumed and closed.

## April 6th, 1876.

**George Busk**, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

Agar Padley Agar, Esq., the Rev. Robert Francis Clarke, William R. Guilfoyle, Esq., Dr. Henry Alleyne Nicholson, John Scully, Esq., and William Waterfield, Esq., were elected Fellows.

The Chairman called attention to the Index to the First Series of the Transactions now completed; and the special thanks of the Society were given to Mr. Bentham for the great labour he had bestowed on its preparation.

A letter was read from Lady Smith, now in her 103rd year, announcing the donation of a copy of Passaeus's 'Hortus floridus,' Utrecht, 1614.

Dr. Day, F.L.S., exhibited specimens of a Madras-bred Trout; also a Kingfisher, *Alcedo bengalensis*, caught and drowned by the closing of the valves of a species of *Unio* which the bird had attempted to seize.

Mr. E. M. Holmes, F.L.S., exhibited living plants of some rare Kentish Mosses.

The following papers were read:—

1. "Account of some new Species, Varieties, and Monstrous Forms of *Medusæ*." By G. J. Romanes, M.A., F.L.S.

2. "On a Collection of Fishes from the Deccan." By Dr. Francis Day, F.L.S.

3. "On the Introduction of Tench and Trout into India." By Dr. Francis Day, F.L.S.

4. "Notes on the Venous System of Birds." By Charles H. Wade, Esq., F.L.S.

5. "On a new Genus of Trematoda and some new or little-known Parasitic *Hirudines*." By J. D. Macdonald, F.R.S. Communicated by Dr. Dobson, M.A., F.L.S.

6. "Notes on Lowe's MS. List of Webb's Type Shells from the Canaries, and on the Annotations thereon of D'Orbigny and Lowe." By the Rev. R. Boog Watson, F.R.S.E. Communicated by J. Gwyn Jeffreys, F.R.S., V.P.L.S.

7. "List of Marine Shells, chiefly from the Solomon Islands, with Descriptions of several new Species." By E. A. Smith, Esq. Communicated by Dr. Murie, F.L.S.

## April 20th, 1876.

GEORGE BENTHAM, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

The Chairman, on the part of the President, proposed Robert Hudson, Esq., R. C. Alexander Prior, M.D., H. T. Stainton, Esq., and Charles Stewart, Esq., as Members of the Committee for auditing the Treasurer's Accounts; and on a show of hands being taken, they were declared to be elected.

The following papers were read:—

1. "Identification of the Modern Copal-tree, *Trachylobium Hornemannianum*, with that which yields the Copal or Animi now found in the earth on the East Coast of Africa." By John Kirk, M.D., F.L.S.

2. "On the African Species of *Coffea*." By W. P. Hiern, M.A., F.L.S.

3. "On the Classification of *Narcissus*." By Shirley Hibberd, Esq. Communicated by George Bentham, F.R.S., V.P.L.S.

4. "On the Plant yielding Latakia Tobacco." By W. T. Thiselton Dyer, M.A., F.L.S.

5. "Contributions to the Botany of the 'Challenger.'—Algæ, chiefly Polynesian, collected by Mr. Moseley." By Prof. Dickie, F.L.S.

6. "Species ac Genera nova Algarum aquæ dulcis . . . . in Expeditione Veneris transit. hieme 1874–75 in Insula Kerguelensi

a cl. Eaton collectis." Auct. Paul Fred. Reinsch Communicated by Dr. Hooker, C.B., P.R.S., F.L.S.

### May 4th, 1876.

**George Bentham**, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

George Henry Parke, Esq., and George Dawson Rowley, Esq., were elected Fellows, and Don Jose Vincente Barboza du Bocage and Prof. William Nylander were elected Foreign Members.

Mr. Duppa Crotch, F.L.S., exhibited skins of the Silver Fox, *Canis fulvus* var. *argentata*, and of the Norwegian Lemming, *Lemmus norvegicus*, Desm.

Dr. Buxton Shillitoe, F.L.S., exhibited a specimen of parasitic fungoid growth, in the fresh state, formed on the larva of an Australian beetle.

Dr. John Anderson, F.L.S., exhibited the eye of the Gangetic Dolphin, *Platanista gangetica*, and specimens of two grasses (*Ischæmum rugosum* and *Paspalum scrobiculatum*) taken from its stomach.

The following papers were read:—

1. "Trematode Parasites from the Dolphins of the Ganges." By T. S. Cobbold, M.D., F.R.S., F.L.S.
2. "On the Genus *Hoodia*, with a Diagnosis of a new Species." By W. T. Thiselton Dyer, M.A., F.L.S.
3. "On the Migration and Habits of the Norwegian Lemming." By W. Duppa Crotch, F.L.S.
4. "Report on the Fungi collected in Kerguelen Island during the stay of the Transit-of-Venus Expedition of 1874–75." By the Rev. M. J. Berkeley, M.A., F.L.S.
5. "Note on *Arctomys dichrous*." By John Anderson, M.D., F.L.S.

### May 24th, 1876.

### *Anniversary Meeting.*

Prof. G. J. **Allman**, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

The President announced that Mrs. Bennett had presented, on the part of her late husband, three Linnean Medals—one of gold, two of silver; these formerly belonged to Robert Brown, and were bequeathed by him to Mr. Bennett. The special thanks of the Society were directed to be presented to Mrs. Bennett for this very acceptable addition to the Society's collection of Linnean memorials.

Dr. Prior, from the Committee appointed to audit the Treasurer's accounts, reported the state of them to be as follows, viz.:—

## *Receipts and Payments of the Linnean Society, from May 1, 1875, to April 30, 1876.*

| | | | | £ | s. | d. |
|---|---|---|---|---|---|---|
| ıt Bankers | | | | 818 | 3 | 1 |
| n Fees | £318 | 0 | 0 | | | |
| ions | 600 | 0 | 0 | | | |
| ʼontributions of £2 2 0 | 10 | 10 | 0 | | | |
| ditto of £3 0 0 | 684 | 3 | 0 | | | |
| ons, Journals, &c. sold | 264 | 6 | 10 | | | |
| ˈn Consols and other Investments. | 79 | 11 | 4 | | | |
| ıers' Association, for Gas | 0 | 4 | 8 | | | |
| | | | | 1956 | 15 | 10 |
| | | | | £2774 | 18 | 11 |

| | £ | s. | d. |
|---|---|---|---|
| Insurance | 6 | 0 | 0 |
| Repairs and Furniture | 307 | 1 | 3 |
| Coals, Gas, Tea, Postage, &c. | 120 | 8 | 9 |
| Salaries | 285 | 15 | 0 |
| Expenses of Society's Publications | 796 | 14 | 1 |
| Books purchased | 63 | 8 | 4 |
| Bookbinding and Stationery | 39 | 16 | 0 |
| Commission | 22 | 3 | 6 |
| | £1641 | 6 | 11 |
| Investment | 563 | 15 | 0 |
| Balance at Bankers* | 569 | 17 | 0 |
| | £2774 | 18 | 11 |

* The above Balance includes £90, the Legacy of the late Daniel Hanbury, Esq., received April 27, 1875.

J. GWYN JEFFREYS, *Treasurer.*

The foregoing Accounts have been examined and found correct.

FRED. CURREY, R. C. A. PRIOR,
ROBERT HUDSON, H. T. STAINTON. } *Auditors.*

May 20, 1876.

The Treasurer then read the following General Statement of the Society's Accounts :—

| | £ | s. | d. |
|---|---|---|---|
| Balance in the hands of the Bankers at the last Audit | 818 | 8 | 1 |
| Received since | 1956 | 15 | 10 |
| | 2774 | 18 | 11 |
| Paid since (exclusive of £563 15*s.* 0*d.* invested in Consols) | 1641 | 6 | 11 |
| Balance cash (£569 17*s.* 0*d.*) invested (£563 15*s.* 0*d.*). | 1133 | 12 | 0 |
| Deduct Balance at last Audit | 818 | 8 | 1 |
| Increase on Cash on invested Balance | 315 | 8 | 11 |
| Amount of Liabilities at last Audit | 458 | 4 | 8 |
| Do. do. present | 312 | 0 | 6 |
| Decrease in amount of Liabilities | 146 | 4 | 2 |
| Add increase on Cash on invested Balance | 315 | 8 | 11 |
| Balance in favour of the Society on the year's Account. | 461 | 13 | 1 |
| Amount of property invested | £2460 | 0 | 0 |

The Secretary reported that the following Members had died, or their deaths been ascertained, since the last Anniversary, viz. :—

### Fellows (14).

Thomas Allis, Esq.
W. Archer, Esq.
W. S. Atkinson, Esq.
J. J. Bennett, Esq.*
C. C. Corsellis, M.D.
Robert Dickson, M.D.*
W. T. Iliff, M.D.
G. G. McPherson, Esq.
Sigismund Rucker, Esq.*
R. J. Shuttleworth, Esq.*
J. J. Stainton, Esq.
William Temple, Esq.
Felix Wakefield, Esq.
Robert Younge, Esq.

### Foreign Members (2).

Adolphe Theodore Brongniart, M.D.*
G. P. Deshayes.*

### Associates (2).

John Brett, M.D.
John Denson, Esq.

Fifty-three Fellows and two Foreign Members had been elected since the last Anniversary.

The Ballot for the Council having closed, the President appointed Dr. Braithwaite, Mr. Grut, and Mr. Matchwick as Scrutineers to examine the lists and report thereon; the votes having been counted and reported to the President, he declared the following result:—

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* For reference to notice, see Index.

*For removal from the Council.*

W. T. T. Dyer, Esq., J. E. Harting, Esq., W. P. Hiern, Esq., J. D. Hooker, C.B., M.D., J. J. Weir, Esq.

*For election into the Council.*

J. G. Baker, Esq., W. B. Carpenter, M.D., Henry Lee, Esq., W. K. Parker, Esq., S. J. A. Salter, M.B.

The Ballot for the Officers having closed, the President appointed the same scrutineers to examine the lists and report theron; the votes having been counted and reported to the President, he declared the following to be elected, viz.:—*President*, Prof. G. J. Allman, M.D.; *Treasurer*, J. Gwyn Jeffreys, LL.D.; *Secretaries*, Frederick Currey, M.A., and St. George Mivart, Esq.

After the delivery of the President's Address, it was moved by Dr. Hooker, seconded by Mr. Grote, and carried unanimously, That the thanks of the Society be given to Dr. Allman for his excellent Address, and that he be requested to allow it to be printed. [The Address was printed in the Journal, Zoology, xiii. 261–305, No 69.]

June 1st, 1876.

Prof. G. J. ALLMAN, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

The President nominated Mr. Bentham, Mr. Busk, Dr. Carpenter, and Dr. Jeffreys, *Vice-Presidents* for the ensuing year.

Thomas Higgins, Esq., and William Hope Boulth, Esq., were elected Fellows.

Mr. Bull, F.L.S., exhibited living plants of Liberian and Arabian Coffee.

Mr. Jackson, A.L.S., exhibited samples of Liberian and Mocha Coffee, also of *Coffæa stenophylla*; likewise a series of Photographs illustrating the Cultivation of Coffee in Central America.

The following papers were read:—

1. "On the Origin of Floral Æstivation." By the Rev. George Henslow, M.A., F.L.S.

2. "On Glandular Bodies on *Acacia sphærocephala* and *Cecropia peltata*, serving as Food for Ants." By Francis Darwin, M.B., F.L.S.

3. "On a Collection of Ferns formed by Mr. Pool in the Interior of Madagascar." By J. G. Baker, F.L.S.

4. "Lichens from Madagascar collected by Mr. Pool." By the Rev. J. M. Crombie, M.A., F.L.S.

5. "Notice of new living Crinoids belonging to the *Apiocrinidæ*." By Prof. C. Wyville Thomson, F.L.S.

6. "Notice of some peculiarities in the Mode of Propagation of certain Echinoderms of the Southern Sea." By Prof C. Wyville Thomson, F.L.S.

## June 15th, 1876.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

Theodore Rathbone, Esq., was elected a Fellow.

The following papers were read:—

1. "On the Domestic Pig of Prehistoric Times in Britain." By George Rolleston, M.D., F.R.S., F.L.S.

2. "On the Superposed Arrangements of the Parts of the Flower." By M. T. Masters, M.D., F.R.S., F.L.S.

3. "On the Histology and Development of *Ballia*." By W. Archer, F.R.S. Communicated by W. T. T. Dyer, F.L.S.

4. "On the Osteology and Pterylosis of *Eurynorhynchus pygmæus*." By John Anderson, M.D., F.L.S.

5. "On some Points in the Histology of certain Species of *Corallineæ*." By Major-General Nelson, R.E., and Prof. P. M. Duncan, F.R.S. Communicated by Dr. Murie, F.L.S.

6. "Notes on a small Collection of Birds from S.E. New Guinea." By R. B. Sharpe, F.L.S.

7. "Notes on Oxystomatous Crustacea." By E. J. Miers, F.L.S.

8. "On the Digestive Ferment of *Nepenthes*." By S. H. Vines, B.A. Communicated by W. T. T. Dyer, F.L.S.

9. "Notes on a *Lomaria* from the Malvern District, Canterbury, New Zealand." By T. H. Potts, F.L.S.

10. "Habits of Ferns observed about the Malvern Hills, Canterbury, New Zealand." By T. H. Potts, F.L.S.

11. "Additional Note relative to the Norwegian Lemming." By W. Duppa Crotch, F.L.S.

12. "Lichenes Insulæ Rodriguesii. Enumeration of Lichens collected by Dr. Balfour in the Island of Rodriguez." By the Rev. J. M. Crombie, M.A., F.L.S.

13. "Botany of the 'Challenger':—
"Marine Algæ collected by H. N. Moseley, M.A., in Japan." By George Dickie, M.D., F.L.S.

14. "Marine Algæ collected by Mr. Moseley at Juan Fernandez." By George Dickie, M.D., F.L.S.

15. "Marine Algæ collected by Mr. Moseley in the Sandwich Islands and in Torres Straits." By George Dickie, M.D., F.L.S.

16. "Note on the Freshwater Algæ of Kerguelen Island." By W. Archer, F.R.S. Communicated by Dr. Hooker, C.B., Pres.R.S., F.L.S.

# PROCEEDINGS

OF THE

# LINNEAN SOCIETY OF LONDON.

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(SESSION 1876–77.)

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November 2nd, 1876.

Prof. G. J. ALLMAN, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

Mr. D. Crotch, F.L.S., exhibited live Lemmings, with drawings, and maps of their migrations.

Mr. Algernon Peckover, F.L.S., exhibited specimens of young Insectivora, *Hemicentetes nigriceps*, and Insects from Madagascar.

Mr. A. G. Butler, F.L.S., exhibited specimens of Insects belonging to the genus *Euptychia*.

Mr. A. de Crespigny exhibited specimens of *Tordylium maximum*, which he had gathered in August last in considerable quantity near Tilbury Fort.

The following papers were read:—

1. "On the Distribution of the Monocotyledonous Orders into primary Groups, more especially with reference to the Australian Flora." By George Bentham, F.R.S., V.P.L.S.

2. "On some Irish Sticklebacks (*Gasterosteus*)." By Surgeon-Major Francis Day, F.L.S.

3. "On the Respiratory Action of the Carnivorous Water-Beetles (*Dytiscidæ*)." By D. Sharpe, Esq., and

4. "Descriptions of some new *Scarabæidæ* from Central America." By D. Sharpe, Esq. Both communicated by H. W. Bates, F.L.S.

5. "Descriptions of two new Lepidopterous Insects from Malacca." By A. G. Butler, F.L.S.

6. "Descriptions of new Species of the Lepidopterous genus *Euptychia*." By A. G. Butler, F.L.S.

7. "Botany of the 'Challenger': Supplemental Note on the Algæ of the 'Challenger' Expedition." By George Dickie, M.D. F.L.S.

### November 16th, 1876.

Prof. G. J. **Allman**, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

J. C. Oman, Esq., R. H. Peck, Esq., and D. G. Rutherford, Esq., were elected Fellows.

Mr. Moseley exhibited, in illustration of his paper, examples of the Insular Floras of the South Atlantic and Indian Oceans; also a collection of Japanese books bearing upon Botany, Horticulture, and Zoology.

Mr. Sharpe exhibited drawings of the birds described in his paper.

The following papers were read:—

1. "Notes on the Flora of Marion Island." By H. N. Moseley, M.A. Communicated by Prof. Oliver, F.R.S., F.L.S.
2. "On the Birds collected by Prof. J. B. Steere in the Philippine Archipelago." By R. Bowdler Sharpe, F.L.S.
3. "Note on an American Grasshopper, *Caloptenus femur-rubrum*." By A. Oppermann; with Remarks by Frederick Smith, Esq. Communicated by Dr. Murie, F.L.S.

### December 7th, 1876.

**George Bentham**, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

David Alfred Mitchell Aird, Esq., Randal H. Alcock, Esq., Captain William E. Armit, James Armstrong, Esq., Edward Bibbins Aveling, D.Sc., George Dransfield Brown, Esq., Henry Laver, Esq., Henry Skey Muir, M.D., Horace Pearce, Esq., Greenwood Pim, Esq., Count Werner van den Steen, John Davidson Walker, Esq., and Arthur W. Waters, Esq., were elected Fellows.

Mr. Thomas Christy, Jun., exhibited specimens of the so-called "Black Coral," *Antipathes* sp., from the Philippines.

The following papers were read:—

1. "On the Geographical Distribution of Indian Freshwater Fishes." By Dr. Francis Day, F.L.S.
2. "Systema Iridacearum." By J. G. Baker, F.L.S.
3. "New British Lichens." By Rev. W. A. Leighton, M.A., F.L.S.

### December 21st, 1876.

Prof. G. J. **Allman**, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

Thomas Christy, Jun., Esq., and Robert Drane, Esq., were elected Fellows.

The following papers were read:—

1. "The Butterflies of Malacca." By A. G. Butler, F.L.S.

2. "On the Male Genital Armature in the European Rhopalocera." By F. Buchanan White, M.D., F.L.S.

3. "On a Commercial Cane called 'Whangee,' *Phyllostachys* sp." By John R. Jackson, A.L.S.

4. "On a new Hornbill from the Island of Panay." By R. Bowdler Sharpe, F.L.S.

5. "On the Habits of Hornbills." By John Anderson, M.D., F.L.S.

6. "Morphological Notes on certain Species of *Thunbergia*." By M. M. Hartog, F.L.S.

7. "On new Deep-sea Ascidians from the 'Challenger' Expedition." By H. N. Moseley, M.A. Communicated by Dr. Murie, F.L.S.

8. "On the Comparative Anatomy of the Auditory Ossicles of the Mammalia." By A. H. G. Doran, Esq. Communicated by W. H. Flower, F.L.S.

9. "On *Actæmorpha erosa*, a new Crustacean." By E. J. Miers, F.L.S.

### January 18th, 1877.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

William Miller Ord, M.D., Thomas Routledge, Esq., and Samuel David Titmas, Esq., were elected Fellows.

Mr. R. I. Lynch exhibited young plants of wheat grown from seed which had been exposed, during the Polar Expedition of 1874–76, to the intense cold of Smith's Sound.

The following papers were read:—

1. "On the Amphibious and Migratory Fishes of India." By Dr. Francis Day, F.L.S.

2. "Account of new Species, Varieties, and Monstrous Forms of Medusæ."—Part II. By G. J. Romanes, F.L.S.

### February 1st, 1877.

George Bentham, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

George Boulger, Esq., Alfred S. Heath, Esq., and William Melles, Esq., were elected Fellows.

Mr. Bennett, F.L.S., exhibited specimens of Mimicking Insects captured in Syria by N. Goadman, Esq.

Mr. Stevens, F.L.S., exhibited some unusually large Oak-leaves gathered near Croydon; also an example of dorsal cohesion in the flowers of a species of Anemone.

The following papers were read:—

1. "On the Habits of Ants, Bees, and Wasps."—Part IV. By Sir John Lubbock, Bart., F.R.S., F.L.S.

2. "Aspect of the Vegetation of Rodriguez." By Isaac Bayley Balfour, D.Sc., F.L.S.

3. "Tropical Ferns collected by Prof. Steere in 1870–75." By M. W. Harrington, Esq., M.A. Communicated by J. G. Baker, F.L.S.

4. "Enumeration of Fungi collected during the Expedition of H.M.S. 'Challenger'" (3rd notice). By the Rev. M. J. Berkeley, M A., F.L.S.

### February 15th, 1877.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

William Burns, Esq., Edmund Thomas Gardner, Esq., Mark W. Harrington, Esq., J. W. S. Meiklejohn, M.D., the Rev. John Stobbs, and Sir Charles William Strickland, Bart., were elected Fellows.

Mr. Lister, F.L.S., exhibited under the Microscope, and made some remarks on, specimens of the Plasmodium or Amœboid stage of *Myxomycetes*.

The following papers were read:—

1. "On the Root-stock of *Marattia fraxinea*, Sm." By John Buchanan, Esq., F.L.S.

2. "On Algæ collected by Dr. Isaac B. Balfour, F.L.S., at the Island of Rodriguez." By George Dickie, M.D., F.L.S.

3. "On a new example of the Phyllodocid (*Anaitis rosea*)." By W. C. M'Intosh, M.D., F.R.S.E., F.L.S.

4. "On certain new forms of Actinariæ dredged in the Deep Sea by H.M.S. 'Challenger,' with a Description also of certain new Pelagic surface-swimming species." By H. N. Moseley, M.A. Communicated by Dr. Murie, F.L.S.

5. "On the Pouch of Marsupials." By R. D. Fitzgerald, F L.S.

### March 1st, 1877.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

Robert Gillies, Esq., Herbert Goss, Esq., A. C. L. G. Günther, M.D., and Matthew Moggridge, Esq., were elected Fellows; and Dr. M. C. Cooke was elected an Associate.

Mr. Hiern, F.L.S., exhibited and made some remarks on the embryo of *Diospyros Embryopteris*, Persoon, upon which species Gaertner founded his genus *Embryopteris*.

Dr. Masters, F.L.S., exhibited and gave detailed notices of a number of trees from Gordon Castle, Banffshire, sent to him by Mr. J. Webster, gardener and forester to the Duke of Richmond and Gordon.

The following papers were read:—

1. "Spicilegium Floræ Maroccanæ." By John Ball, F.R.S., F.L.S.

2. "On the Liliaceæ, Iridaceæ, Hypoxidaceæ, and Hæmodoraceæ of Dr. Welwitsch's Angolan Herbarium." By J. G. Baker, F.L.S.

3. "Description of a new form of Ophiuridæ." By Edgar A. Smith, Esq. Communicated by Dr. Murie, F.L.S.

4. "Further Contributions to the Lichenographia of New Zealand." By Charles Knight, F.L.S.

## March 15th, 1877.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

The Rev. R. Gardner Smith and Alexander Young Stewart, Esq., were elected Fellows.

Mr. A. Young Stewart exhibited samples of a Bark from New Zealand, believed to be that of a species of *Leptospermum*, and said to possess remarkable medical properties. He also laid before the Society a sample of what has been termed "Persian Manna."

The following papers were read:—

1. "On poisoned Spears and Arrows." By the Rev. Thomas Powell, F.L.S.

2. "Contributions to the Ornithology of New Guinea."—Part II. By R. Bowdler Sharpe, F.L.S.

3. "Notice of two large extinct Lizards formerly inhabiting the Mascarene Islands." By Dr. A. Günther, F.R.S., F.L.S.

## April 5th, 1877.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

Captain Chimmo, R.N., the Rev. John Constable, and Archibald Liversidge, Esq., were elected Fellows.

Sir Charles Strickland, Bart., exhibited a flowering specimen of *Crinum aquaticum*, a native of Graham's Town, Cape of Good Hope.

The following papers were read:—

1. "On a Collection of Ferns made by Miss H. Gilpin in the Interior of Madagascar." By J. G. Baker, F.L.S.

2. "Contributiones ad floram Algarum aquæ dulcis Prom. Bonæ Spei." By Paul F. Reinsch. Communicated by Dr. Hooker, C.B., Pres.R.S.

3. "On *Myodes Lemmus* in Norway." By Robert Collett. Communicated by Dr. Murie, F.L.S.
4. "List of Hepaticæ collected by the Rev. A. E. Eaton at the Cape of Good Hope." By William Mitten, A.L.S.
5. "New British Lichens." By the Rev. W. A. Leighton, F.L.S.

April 19th, 1877.

GEORGE BENTHAM, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

The Chairman proposed Dr. Boycott, Mr. Lee, Mr. McLachlan, and Mr. Stainton as Members of the Committee for auditing the Treasurer's accounts; and a show of hands having been taken, they were declared to be elected.

The following papers were read:—

1. "On the Geographical Distribution of the *Meliaceæ*." By M. Casimir de Candolle. Communicated by George Bentham, F.R.S., V.P.L.S.
2. "On the Disarticulation of Branches." By R. I. Lynch, Esq. Communicated by J. G. Baker, F.L.S.
3. "On the Geographical Distribution of Indian Freshwater Fishes."—Part II. By Dr. Francis Day, F.L.S.
4. "On the Regadéra (*Euplectella aspergillum*)." By Captain Chimmo, R.N., F.L.S.
5. "On a new form of *Globigerina*." By Captain Chimmo, R.N., F.L.S.

May 3rd, 1877.

Prof. G. J. ALLMAN, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

James Paton, Esq., was elected a Fellow; and M. Pierre Duchartre, Professor Carl Gegenbaur, and Professor Rudolph Leuckart were elected Foreign Members.

Mr. A. W. Bennett exhibited specimens of the Common Primrose gathered by Miss Dowson near Beccles, showing the curious abnormal characters of the stamens being from six to ten in number and completely dissociated from the corolla.

The following papers were read:—

1. "On *Thlaspi perfoliatum* as a British Plant." By G. S. Boulger, F.L.S.
2. "On the Structure and Affinities of the Genus *Alveolites* and Allied Forms." By Prof. Nicholson, F.L.S., and R. Etheridge, Jun., Esq.
3. "On the Sacral Plexus and Sacral Vertebræ of Lizards." By Prof. St. George J. Mivart, F.R.S., F.L.S., and the Rev. Robert Clarke, F.L.S.

May 24th, 1877.

## *Anniversary Meeting.*

Prof. G. J. **Allman**, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

Mr. M^c^Lachlan, from the Committee appointed to audit the Treasurer's accounts, reported the state of them to be as follows (see p. xx).

The Treasurer then read the following General Statement of the Society's Accounts from the 1st May, 1876, to the 30th April, 1877, viz.:—

| | £ | *s.* | *d.* |
|---|---|---|---|
| Balance in the hands of the Bankers at the last Audit | 569 | 17 | 0 |
| Received since (including legacies, £700) | 2568 | 6 | 10 |
| | 3138 | 3 | 10 |
| Paid since | 1910 | 3 | 4 |
| Cash (£856 0*s.* 6*d.*) or invested Balance (£372) | 1228 | 0 | 6 |
| Deduct Cash Balance at last Audit | 569 | 17 | 0 |
| Increase in the Cash or invested Balance | 658 | 3 | 6 |
| Amount of Liabilities at last Audit | 312 | 0 | 6 |
| Do. do. present Audit | 68 | 6 | 10 |
| Decrease in amount of Liabilities | 243 | 13 | 8 |
| Add increase in the Cash or invested Balance | 658 | 3 | 6 |
| Balance in favour of Society on year's Account | £901 | 17 | 2 |
| Funds invested at date | £2860 | 0 | 0 |

The Secretary reported that the following Members had died, or their deaths been ascertained, since the last Anniversary, viz.:—

### Fellows (12).

J. Scott Bowerbank, LL.D., F.R.S.*
John Butter, M.D.
William Carr, M.D.
Henry Collinson, Esq.
Charles Enderby, Esq.*
Rev. Thomas Hugo*.
Charles Lambert, Esq.
John Leckenby, Esq.*
Edward Newman, Esq.*
John Russell Reeves, Esq.*
Sudlow Roots, Esq.*
Alfred Smee, Esq.*

### Foreign Members (5).

Karl Ernst von Baer, M.D.*
Alexander Braun, M.D.*
Christian Gottfried Ehrenberg, M.D.*
Wilhelm Hofmeister, M.D.*
Guiseppe de Notaris, M.D.*

* For reference to notice, see Index.

### *Receipts and Payments of the Linnean Society, from May* 1, 1876, *to April* 30, 1877.

| | | | | £ | s. | d. |
|---|---|---|---|---|---|---|
| Balance in the hands of the Bankers at the last Audit | | | | 569 | 17 | 0 |
| Admission Fees | £246 | 0 | 0 | | | |
| Compositions | 480 | 0 | 0 | | | |
| Annual Contributions of £2 2 0 | 8 | 8 | 0 | | | |
| Ditto ditto of 3 0 0 | 758 | 18 | 6 | | | |
| Transactions, Journals, &c. sold | 273 | 11 | 2 | | | |
| J. O. Westwood, Esq., contribution towards the cost of his paper | 5 | 0 | 0 | | | |
| Interest on Consols &c. | 96 | 9 | 2 | | | |
| Debenture paid off | 200 | 0 | 0 | | | |
| Legacies | 700 | 0 | 0 | | | |
| | | | | 2768 | 6 | 10 |
| | | | | £3338 | 3 | 10 |

| | £ | s. | d. |
|---|---|---|---|
| Insurance | 15 | 7 | 6 |
| Repairs and Furniture | 39 | 10 | 4 |
| Coals, Gas, Tea, Postage, &c. | 116 | 5 | 3 |
| Salaries | 337 | 5 | 0 |
| Expenses of Society's Publications | 1114 | 12 | 0 |
| Books purchased | 204 | 14 | 0 |
| Bookbinding and Stationery | 58 | 8 | 1 |
| Commission | 24 | 1 | 2 |
| | £1910 | 3 | 4 |
| Investment | 572 | 0 | 0 |
| Balance in the hands of the Bankers* | 856 | 0 | 6 |
| | £3338 | 3 | 10 |

* The above Balance includes £3 16*s.* 5*d.*, the unexpended portion of the Legacy of the late Daniel Hanbury, Esq.

J. GWYN JEFFREYS, *Treasurer.*

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The foregoing accounts have been examined and the Balance found to be correctly stated at £856 0*s.* 6*d.*

May 22, 1877.

THOMAS BOYCOTT,
R. M<sup></sup>cLACHLAN,
ST. GEORGE MIVART,
H. T. STAINTON. } *Auditors.*

That the following Fellow had withdrawn,

A. F. Haselden, Esq.

And that forty-three Fellows and three Foreign Members had been elected since the last Anniversary.

The President then opened the business of the day, and the Members present proceeded to ballot for the Council and Officers for the ensuing year.

The Ballot for the Council having closed, the President nominated Mr. Grut, Mr. M'Lachlan, and Mr. Pascoe to be Scrutineers; the votes having been counted and reported to the President, he declared the following Members to be removed from the Council, viz.:—

George Bentham, F.R.S., Lieut.-Gen. Scott, C.B., R. B. Sharpe, Esq., H. T. Stainton, Esq., Charles Stewart, Esq.

And the following to be elected into the Council, viz.:—

Lieut.-Col. Grant, William Carruthers, Esq., Robert Hudson, Esq., John Millar, M.D., R. C. A. Prior, M.D.

The Ballot for the Officers having also closed, the President appointed the same Scrutineers; the votes having been counted and reported to the President, he declared the following to be elected, viz.:—*President*, Prof. G. J. Allman, M.D.; *Treasurer*, J. Gwyn Jeffreys, LL.D.; *Secretaries*, Frederick Currey, Esq., and St. George J. Mivart, Esq.

After the reading of the President's Address, it was moved by Mr. Busk, seconded by Dr. Carpenter, and unanimously resolved, That the thanks of the Society be given to Dr. Allman for his excellent Address, and that he be requested to allow it to be printed. [It will be found in the Journal, Zoology (No. 71), xiii. pp. 385–439.]

June 7th, 1877.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

W. R. M'Nab, M.D., Captain George Peter Moore, and Thomas William Wonfor, Esq., were elected Fellows.

The President nominated George Busk, Esq., W. B. Carpenter, M.D., William Carruthers, Esq., and J. Gwyn Jeffreys, LL.D., Vice-Presidents for the ensuing year.

The following papers were read:—

1. "On some Points in the Morphology of the Primulaceæ." By M. T. Masters, M.D., F.R.S., F.L.S.

2. "Note on the Causes of Numerical Increase in the Parts of Plants." By the Rev. George Henslow, M.A., F.L.S.

3. "On the Nymph-Stage of the Embidæ, with Notes on the Habits of the Family." By Robert M'Lachlan, F.L.S.

4. "Observations on British Polyzoa." By C. W. Peach, A.L.S.

5. "On the Floral Development and Symmetry of the Natural Order Sapotaceæ." By Marcus M. Hartog, F.L.S.

6. "Lichens of the 'Challenger' Expedition." By the Rev. J. M. Crombie, F.L.S.

7. "On Species of Crustacea living within Philippine Sponges (*Euplectella* and *Meyerina*)." By Edward J. Miers, F.L.S.

### June 21st, 1877.

The Rev. GEORGE HENSLOW, M.A., in the Chair.

The Minutes of the last Meeting were read and signed.

John Macdonald, M.D., was elected a Fellow.

Dr. Braithwaite, F.L.S., exhibited a panicle of the *Chamærops Fortunei* which had flowered without protection for five consecutive years in his garden at Clapham.

The following papers were read:—

1. "On the Genus *Actinometra*, Müll., with a Morphological Account of a new Species from the Philippines." By P. H. Carpenter, Esq., B.A. Communicated by W. B. Carpenter, M.D., F.L.S.

2. "On the Conditions favouring Fermentation and the Appearance of *Bacteria* &c. in previously boiled Fluids." By H. C. Bastian, M.D., F.L.S.

3. "On a new Genus of Parasitic Algæ (*Mycoidea*), and on the part which it plays in the Formation of certain Lichens." By David D. Cunningham, M.B., F.L.S.

4. "Notes on the Peculiarities and Distribution of Rubiaceæ in Tropical Africa." By W. P. Hiern, F.L.S.

5. "Fungi of the Counties of Dublin and Wicklow." By Greenwood Pim, M.A., F.L.S.

6. "Monograph of the Gymnozoidal Discostomatous Flagellata, a new Order of Infusoria." By W. S. Kent, F.L.S.

7. "Descriptions of Genera and Species of Australian Phytophagous Beetles." By Joseph S. Baly, F.L.S.

8. "Contributions to the Ornithology of New Guinea."—Part III. By R. B. Sharpe, F.L.S.

9. "On the Annelida obtained during the Cruise of H.M.S. 'Valorous' to Davis Straits in 1875." By W. C. M'Intosh, M.D., F.L.S.

# PROCEEDINGS

## OF THE

# LINNEAN SOCIETY OF LONDON.

## (SESSION 1877-78.)

November 1st, 1877.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

Stuart M. Samuel, Esq., and Peter Wyatt Squire, Esq., were elected Fellows.

The Rev. T. H. Sotheby, of Langford Budville, Somerset, exhibited branches of a remarkable Shrub originally from Lady Rolles's garden at Bicton. It was described and figured by Dr. Lindley in the Journal of the Horticultural Society, vol. v., as *Colletia bictonensis*, and there stated to be a seedling raised from *C. spinosa*; but it had been described in the 'Botanical Miscellany' by Sir W. J. Hooker twenty years before as *Colletia cruciata*, from dried specimens collected by Dr. Gillies near Maldonado, La Plata.

Mr. Holmes, F.L.S., exhibited specimens of Sugar-cane attacked by a Fungus, which is causing the destruction of a cane-plantation in the south of India. He also exhibited Mr. Hanbury's collection of Cardamoms from the herbarium of the Pharmaceutical Society, to illustrate Dr. King's paper on the Winged Cardamom.

Dr. Masters, F.L.S., exhibited specimens of a Grape within a grape (adventitious fruit in place of seed), and adventitious tubers producing buds on the root or tigellum of *Brassica Rapa*.

Mr. A. O. Walker, F.L.S., exhibited flowering specimens from his garden at Chester of *Fremontia californica*, *Pentstemon Clevelandii*, *P. spectabilis*, *P. cordifolius*, *Eugenia apiculata*, &c.

The following papers were read:—

1. "On the Source of the Winged Cardamom of Nepaul." By George King, M.B., F.L.S., Superintendent of the Botanic Garden, Calcutta.
2. "Note on Australian Finches of the Genus *Poëphila*." By Captain William E. Armit, F.L.S.
3. "On the Self-fertilization of Plants." By the Rev. George Henslow, F.L.S.
4. "Revision of the Hippidæ (a Group of Anomurous Crustacea)." By E. J. Miers, Esq., F.L.S.

### November 15th, 1877.

J. Gwyn Jeffreys, LL.D., F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

William Stewart Lawson, Esq., the Rev. Murray Alexander Mathew, and William Joshua, Esq., were elected Fellows.

Captain Feilden, R.N., exhibited specimens of Lepidoptera and other insects collected by himself during the recent Arctic Expedition at Grinnell Land between 78° and 83° N. latitude.

Mr. J. Jenner Weir, F.L.S., exhibited specimens of Butterflies captured on the Alps at an elevation of 8000 to 9000 feet.

Dr. Trimen, F.L.S., exhibited specimens of the Olibanum, or Frankincense-tree, *Boswellia Carterii*, Birdwood, gathered by Mr. James Collins at Aden in October 1877. He also made some observations on the variability of the foliage of the species of *Boswellia*; and expressed an opinion than *B. Bhau-Dajiana*, Birdw., was not specifically separable from *B. Carterii*. *B. Frereana*, in a wild state, is confined to Somali-land, where it was recently gathered by Hildebrand.

Mr. Holmes, F.L.S., exhibited dried specimens of *Boswellia* from the herbarium of the late Daniel Hanbury (now the property of the Pharmaceutical Society); also specimens of the gum-resins produced by *Boswellia Carterii* and *B. Frereana*.

The following papers were read:—

1. "Report on the Insecta (including Arachnida) collected by Captain Feilden and Mr. Hart during the recent Arctic Expedition." By Robert McLachlan, F.R.S., F.L.S.
2. "Preliminary Notes on the Surface-fauna of the Arctic Seas as observed in the recent Arctic Expedition." By Edward L. Moss, M.D. Communicated by Dr. Murie, F.L.S.
3. "On the Annelids of the British North-Polar Expedition." By W. C. M'Intosh, M.D., F.R.S., F.L.S.

### December 4th, 1877.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

John Nugent Fitch, Esq., John Sykes Gamble, Esq., John Macoun, Esq., Francis Taylor Piggott, Esq., and Alexander Bannatyne Stewart, Esq., were elected Fellows.

Mr. Thiselton Dyer, F.L.S., exhibited leaves and wood of the *Nau-Mu* Tree, a native of Yunan, probably belonging to the natural family Lauraceæ. The wood of this tree is highly valued by the Chinese for building-purposes, and is also used for coffins. He also exhibited a seed of *Entada scandens* and of an Anonaceous plant (possibly *Cyathocalyx Maingayi*) found in the cæcum of *Rhinoceros sumatrensis*; and a fruit of *Oncocarpus* from the crop of a Fruit-Pigeon (*Carpophaga*); and, in illustration of Dr. Bayley Balfour's paper, part of the fruit-head of a species of *Pandanus*, the fibrous portion of which forms a sort of brush.

Mr. J. E. Howard, F.L.S., exhibited from his garden at Tottenham flowering specimens of two varieties of *Cinchona Calisaya*.

A small collection of Insects from Java was exhibited on behalf of Dr. J. C. Ploem, Director of the Hospital at Sindang-læeja, Java.

Mr. Moggridge, F.L.S., read a note in reference to the occurrence in considerable abundance on Wallis's Down (a wild heath to the north of Bournemouth) of *Dabeocia polifolia* and *Erica vagans*, which, however, although they appeared to have established themselves there, he did not believe to be indigenous.

The following papers were read:—

1. "On certain Organs of the Cidaridæ." By Charles Stewart, F.L.S.
2. "Observations on the Genus *Pandanus*." By Isaac B. Balfour, Sc.D., F.L.S.
3. "On a Collection of Insects obtained by Dr. Ploem in Java." By C. O. Waterhouse, Esq. Communicated by Dr. Murie, F.L.S.
4. "Notes on the Rev. Mr. Crombie's Paper on the Lichens of the 'Challenger' Expedition." By James Stirton, M.D., F.L.S.
5. "Note on the Migration of Wild Geese." By R. C. A. Prior, M.D., F.L.S.

## December 20th, 1877.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

Algernon Sidney Bicknell, Esq., Ernest Ayscoghe Floyer, Esq., and William Vincent Legge, Captain R.A., were elected Fellows.

Dr. Masters showed a remarkable specimen of *Colletia* just received by him in a living state from Signor Fenzi, of Florence, of peculiar interest in connection with the specimens exhibited on November 1st by the Rev. T. H. Sotheby; the same branch producing shoots with the broad flattened deltoid spines characteristic of *C. cruciata*, Hook. (*C. bictonensis*, Lindl.), and others with slender cylindrical spines, very similar to, but more slender than, those of *C. spinosa.*

Mr. S. W. Silver, F.L.S., exhibited a series of Weapons and other objects from New Caledonia; and also Arrows and Poison from the Fiji Islands obtained by Consul Edgar Layard.

Mr. Worthington Smith, F.L.S., exhibited, and made remarks on, a fossil Fungus (*Peronosporites antiquarius*) with zoospores *in situ.* He also exhibited drawings of *Boletus subtomentosus* and other Fungi.

The following papers were read:—

1. "On the Algæ found during the Arctic Expedition." By George Dickie, M.D., F.L.S.
2. "Descriptions of new Genera and Species of Phytophagous Coleoptera." By Joseph Baly, F.L.S.
3. "On the Anatomy of the Elk (*Alces machlis*)." By Prof. M. Watson, M.D., and A. H. Young, M.B. Communicated by Dr. Murie, F.L.S.
4. "On the Minute Structure of *Stromatopora* and its Allies." By Prof. H. A. Nicholson, F.L.S., and Dr. Murie, F.L.S.

### January 17th, 1878.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

John Bedford Korswill, M.R.C.P., was elected a Fellow.

Mr. Thiselton Dyer, F.L.S., exhibited specimens of the Dipterocarpeæ (three species) collected by Beccari in New Guinea.

Mr. Jackson, A.L.S., exhibited a nest of the Wool-bird constructed of cotton-pod wool, which had been forwarded to the Kew Museum by Sir Bartle Frere from Malmesbury, South Africa. He also exhibited fasciated stems of *Dipsacus fullonum*, which had been largely imported by Messrs. Marshall and Snelgrove, and employed by them as handles for parasols &c.

The following papers were read:—

1. "On *Hypsiprymnodon*, a Genus indicative of a distinct Family in the Diprotodont Section of the Marsupialia." By Prof. Owen, F.R.S., F.L.S., &c.
2. "On the Nutrition of *Drosera rotundifolia*." By Francis Darwin, M.B., F.L.S.
3. "Notes touching Recent Researches on the Radiolaria." By Prof. St. George Mivart, F.R.S., F.L.S., &c.

### February 7th, 1878.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

John Giraud Agar, Esq., and Charles Berjeau, Esq., were elected Fellows.

Mr. Thiselton Dyer, F.L.S., exhibited, and made some observations on, the "Rain-tree," *Moyabamba* of Central America, *Pithecolobium Saman*, Benth.

The following papers were read:—

1. "Observations on the Habits of Ants, Bees, and Wasps."—Part V. By Sir John Lubbock, Bart., F.R.S., F.L.S.

2. "On the Structure of the Shell of the Bryozoa." By Arthur W. Waters, Esq., F.L.S.

The following Address to Professor von Siebold, F.M.L.S., was proposed by the President and unanimously agreed to:—

"The Linnean Society of London sends Greeting to its illustrious Member, Carl Theodor Ernst von Siebold. It congratulates him on the celebration of his Jubilee, as the recognition of his many epoch-making researches, and of a lifetime passed in the service of science.

"It trusts that many years of health and strength are still before him, and that science may long continue to have the benefit of his labours."

### February 21st, 1878.

William Carruthers, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

Henry F. Hance, Ph.D., Edward Milner, Esq., George Shearer, M.D., and the Rev. R. Boog Watson were elected Fellows.

Mr. Thomas Christy, F.L.S., exhibited a diagram on Ossenkop's system of Plant propagation. He also exhibited some berries of the Liberian Coffee of this year's growth.

Mr. Holmes, F.L.S., exhibited Galls from the Oak, formed by *Aphilothrix Sieboldii*, from Willesborough, Ashford; also specimens of *Duboisia myoporoides*, R. Br., from Brisbane.

Mr. Lockwood exhibited a specimen of *Spongilla Carteri* from Northern India.

Mr. Thiselton Dyer, F.L.S., exhibited the Inflorescence and a Drawing of *Ptychosperma rupicola*, Thw. (*Loxococcus*, Wendl.), which had flowered, for the first time in Europe, at Kew.

The following papers were read:—

1. "Notes on the Mahwa Tree (*Bassia latifolia*)." By E. Lockwood, Esq. Communicated by Thomas Christy, F.L.S.

2. "Synopsis of the Hypoxidaceæ." By J. G. Baker, F.L.S.

3. "On the Schœpfieæ and Cervantesieæ, distinct Tribes of the Styraceæ." By John Miers, F.R.S., F.L.S.

4. "On the Butterflies in the Collection of the British Museum hitherto referred to the Genus *Euplœa*, Fabr." By A. G. Butler, F.L.S.

## March 7th, 1878.

J. GWYN JEFFREYS, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

Charles C. P. Hobkirk, Esq., was elected a Fellow.

The Chairman announced that in consequence of the illness of the Assistant in the Library, the Reading-room would be closed during the next month at half-past four.

Mr. Thomas Christy exhibited a series of Chinese fruits; among others a remarkable Citron, known in China as the "Claw of Buddha."

Mr. Rich exhibited specimens of a rare variety of *Helix virgata*.

Prof. Lankester exhibited, and made remarks on, a series of Fossil Walrus-tusks (*Trichechodon Huxleyi*) from the Crag of Suffolk.

The following papers were read:—

1. "On some new Species of Nudibranchiate Mollusca from the Eastern Seas." By Cuthbert Collingwood, M.A., F.L.S.
2. "On the Laws governing the Production of Seed in *Wistaria sinensis*." By Thomas Meehan, Esq. Communicated by the Rev. George Henslow, M.A., F.L.S.
3. "Enumeration of the Fungi collected during the Arctic Expedition of 1875–76." By the Rev. M. J. Berkeley, F.L.S.
4. "On the Development of *Filaria sanguinis-hominis*, and on the Mosquito, considered as a Nurse." By Patrick Manson, M.D. Communicated by T. S. Cobbold, M.D., F.L.S.
5. "The Life-history of *Filaria Bancrofti*, as explained by the Discoveries of Wucherer, Lewis, and others." By T. S. Cobbold, M.D., F.L.S.

## March 21st, 1878.

WILLIAM CARRUTHERS, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

John Evans, Esq., Campbell Patrick Ogilvie, Esq., Arthur Veitch, Esq., and Sidney H. Vines, Esq., were elected Fellows.

Mr. Carruthers exhibited, on the part of G. T. Saul, Esq., an example of enormous development and adventitious roots upon a species of *Berberis*.

On behalf of Mr. J. Willis Clarke of Cambridge, there were exhibited three stuffed specimens (male, female, and young) of Fur Seals (*Otaria ursina*) from Alaska.

The following papers were read:—

1. "The Venation in the Leaf of *Conium maculatum*." By John Gorham, M.R.C.S.E. Communicated by the Botanical Secretary.

2. "On some Genera of the Olacaceæ." By John Miers, F.R.S., F.L.S.

3. "A new Arrangement of the Classes of Zoology founded on the Position of the Oviducts, or, when they are absent, on the Position of the Ovaries, including a new Mode of Arranging the Mammalia." By Benjamin Clarke, F.L.S., M.R.C.S.

4. "List of Fungi from Brisbane, Queensland, with Descriptions of new Species." By the Rev. M. J. Berkeley, F.L.S., and C. E. Broome, F.L.S.

### April 4th, 1878.

**William Carruthers**, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

Frederick Manson Bailey, Esq., Archibald Hervan, M.D., George Payne, jun., Esq., and James Robert Reid, Esq., were elected Fellows.

Dr. Trimen, F.L.S., exhibited a remarkable specimen of the base of the stem of the Water-Hemlock (*Cicuta virosa*, L.), showing the floating winter state of the plant.

Mr. George Murray placed on the table specimens of growing *Saprolegniæ* exhibiting terminal and interstitial oögonia.

The following papers were read:—

1. "On some Minute Hymenopterous Insects." By Prof. Westwood, F.L.S.

2. "The Fungi of Texas." By M. C. Cooke, M.A., LL.D., A.L.S.

3. "Remarks on the Peculiar Properties ascribed by the Samoans to a Fungus." By the Rev. Thomas Powell, F.L.S.

### April 18th, 1878.

**J. Gwyn Jeffreys**, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

The Rev. Albert Augustus Harland, Frederick Townsend, Esq., the Rev. John James Muir, and Walter George Piper, Esq., were elected Fellows.

The Chairman reported the Donation, on the part of the Subscribers, of a Portrait in Oil of the late John Claudius Loudon, F.L.S., F.H.S., &c., painted from life in 1840–41, by John Linnell. The special thanks of the Society were directed to be presented for this very acceptable memorial of Mr. Loudon by so eminent an artist as Mr. Linnell.

The Chairman proposed Mr. Bentley, Dr. Cobbold, Mr. Hudson, and Dr. Prior as Members of the Committee for auditing the Treasurer's Accounts; and a show of hands having been taken, they were declared to be elected.

The following papers were read:—

1. "On the Geographical Distribution of the Gulls and Terns (Laridæ)." By Howard Saunders, F.L.S.

2. "Notes on the Action of Limpets in Sinking Pits and Abrading the Surface of the Chalk at Dover." By J. Clarke Hawkshaw, Esq. Communicated by Dr. Murie, F.L.S.

3. "On the Fertilization of *Meyenia erecta*." By R. Irwin Lynch, Esq. Communicated by Dr. Murie, F.L.S.

The following alterations in the Bye-Laws, agreed to by the Council, were read by the Vice-President in the Chair, and ordered to be suspended in the Meeting-Room:—

It is proposed that the 3rd, 4th, 5th, and 6th Sections of Chapter II. of the Bye-Laws shall be repealed; and that in lieu thereof the new Bye-Laws hereafter set forth shall be made and established, and that the same shall be inserted and stand as Sections III., IV., V., VI., VII., VIII., and IX. of Chapter II.

## *Proposed New Bye-Laws.*

## CHAPTER II.

Section III.—Every Fellow who shall be elected after the Twenty-fourth day of May, 1829, and before the First day of November, 1878, shall, besides the Admission-Fee, further contribute towards the Funds of the Society, previous to his Admission, by paying the sum of Thirty Pounds in lieu of all future Payments; or he shall sign an Obligation for the regular Payment of Three Pounds per Annum to the Society, so long as he shall continue a Fellow.

Section IV.—Every Fellow elected after the Twenty-fourth day of May, 1829, and before the First day of November, 1878, may at any time compound for his future Contributions by paying the Sum of Thirty Pounds in One Year instead of the Annual Contribution for that Year; in which case his Obligation to make Annual Payments shall be void.

Section V.—The Yearly Contributions of all Fellows elected after the Twenty-fourth day of May, 1829, and before the First day of November, 1878, shall be considered due and payable at each Anniversary Meeting for the year preceding; but no such Fellow who shall have been elected on or after the First day of February, 1878, shall pay the Annual Contribution falling due at the Anniversary Meeting of that Year.

Section VI.—Every Fellow elected on or after the First of November, 1878, shall, in addition to the Admission-Fee of Six Pounds, also pay Three Pounds as his Annual Contribution in advance for the Year commencing on the preceding Twenty-fourth of May, and a similar Contribution of Three Pounds annually on each successive Twenty-fourth of May, so long as he shall continue a Fellow; provided, however, that any such Fellow, if elected between the First of March and the Twenty-fourth of May in any year, shall not be liable to the Contribution for the year commencing on the preceding Twenty-fourth of May, but shall pay his first year's Contribution in advance on the succeeding Twenty-fourth of May. Every such Fellow shall sign an Obligation for the regular payment of his Annual Contribution of Three Pounds.

Section VII.—Every Fellow who shall be elected on or after the First of November, 1878, may at any time compound for his future Contribution, including that for the then current year, by paying the Sum of Forty-five Pounds. If he should have already paid the Contribution for the current Year, such Payment shall be allowed in part of the Composition.

SECTION VIII.—In case any Fellow be not usually resident within the United Kingdom of Great Britain and Ireland, such Person shall, within Six Months after his Election, or within such other time as the Council shall permit, and before he be admitted, either provide such Security for the Payment of the Annual Contributions as shall be satisfactory to the Council, or shall pay to the Treasurer, in lieu of Annual Contributions, such Sum as is hereinafter mentioned; that is to say, if such Fellow shall have been elected after the Twenty-fourth day of May, 1829, and before the First day of November, 1878, the Sum of Thirty Pounds; and if such Fellow shall have been elected on or after the First day of November, 1878, the Sum of Forty-five Pounds.

SECTION IX.—If any Fellow paying yearly Contributions should fail to bring or send in the same to the Treasurer, then, unless the said Payment be remitted in whole, or in part, by special Order of the Council, his Obligation shall be put in Suit for the Recovery thereof; and he shall be liable to Ejection from the Society; upon which the Council shall proceed as they may see cause.

## May 2nd, 1878.

W. B. CARPENTER, M.D., F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

The proposed alterations in Chapter II. of the Bye-Laws were again read by the Vice-President in the Chair.

M. César Chantre and Thomas Comber, Esq., were elected Fellows.

Teodoro Caruel, Ernest Cosson, M.D., Dr. George Engelmann, Dr. Eduard Fenzl, and Dr. Julius Sachs were elected Foreign Members.

Mr. J. R. Jackson, A.L.S., sent for exhibition specimens of the Leaves, Fruit, and portions of the Stem of *Yucca baccata*, Torrey, from Mexico.

A drawing was exhibited and a letter read from the Rev. H. H. Higgins in reference to a large Tubularian Hydrozoon from New Zealand, collected by Dr. Andrew Sinclair.

Mr. Thomas Higgin, F.L.S., exhibited a photograph, of natural size, and microscopic specimens of *Chitina erecopsis*, a rare form of the Hydractiniidæ from New Zealand.

The following papers were read:—

1. "On *Marupa*, a Genus of the Simarubaceæ." By John Miers, F.R.S., F.L.S.

2. "On the Seed-structure and Germination of *Pachira*." By R. Irwin Lynch. Communicated by Dr. Murie, F.L.S.

3. "On the Occurrence of Conoidal Fructification in the Mucorineæ, illustrated by *Chonephora*." By D. D. Cunningham, F.L.S.

May 24th, 1878.

*Anniversary Meeting.*

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

Dr. Prior, from the Committee appointed to audit the Treasurer's Accounts, reported the same to be as follows (see p. xxxiii).

The Treasurer then read the following General Statement of the Society's Accounts from 1st May, 1877, to the 30th April, 1878:—

| | £ | s. | d. |
|---|---|---|---|
| Balance in hands of Bankers at last Audit | 856 | 0 | 6 |
| Received since | 1936 | 3 | 5 |
| | 2792 | 3 | 11 |
| Paid since (exclusive of Investment, £700) | 1833 | 18 | 8 |
| Cash (or invested) Balance at Bankers | 958 | 5 | 3 |
| Balance in hands of Bankers at last Audit | 856 | 0 | 6 |
| Do. do. present Audit | 258 | 5 | 3 |
| Decrease in the Cash Balance | 597 | 15 | 3 |
| Amount of Liabilities at present Audit | 123 | 18 | 7 |
| Do. do. last Audit | 68 | 6 | 10 |
| Increase in Liabilities | 55 | 11 | 9 |
| Decrease in the Cash Balance | 597 | 15 | 3 |
| Add increase in Liabilities | 55 | 11 | 9 |
| | 653 | 7 | 0 |
| Invested since last Audit | 700 | 0 | 0 |
| Deduct decrease of Cash Balance and increase of Liabilities | 653 | 7 | 0 |
| Balance in favour of Society on the Year's Account. | £46 | 13 | 0 |
| Invested Funds | £3604 | 13 | 10 |

The alterations in the Bye Laws proposed by the Council on

## *Receipts and Payments of the Linnean Society from May 1, 1877, to April 30, 1878.*

| | | | | £ | s. | d. |
|---|---|---|---|---|---|---|
| lance in the hands of the Bankers at the last Audit... | | | | 856 | 0 | 6 |
| mission Fees .................................. | 252 | 0 | 0 | | | |
| mpositions .................................... | 480 | 0 | 0 | | | |
| nual Contributions of £2 2s. ........... | 8 | 8 | 0 | | | |
| Do. do. £3 0s. ........... | 836 | 10 | 10 | | | |
| ınsactions, Journal, &c. sold ........... | 237 | 19 | 11 | | | |
| erest on Consols, &c......................... | 121 | 4 | 8 | | | |
| | | | | 1936 | 3 | 5 |
| | | | | £2792 | 3 | 11 |

| | £ | s. | d. |
|---|---|---|---|
| Taxes and Insurance .................................. | 11 | 8 | 9 |
| Repairs and Furniture.................................. | 4 | 9 | 9 |
| Coals, Gas, Tea, Postage, &c. ........................ | 127 | 9 | 5 |
| Salaries ...................................................... | 372 | 10 | 0 |
| Expenses of Society's Publications .................. | 1149 | 17 | 6 |
| Books purchased ........................................ | 105 | 12 | 6 |
| Bookbinding and Stationery ........................... | 41 | 8 | 0 |
| Commission ................................................ | 21 | 2 | 9 |
| | £1833 | 18 | 8 |
| Investments ............................................... | 700 | 0 | 0 |
| Balance in the hands of the Bankers.................... | 258 | 5 | 3 |
| | £2792 | 3 | 11 |

J. GWYN JEFFREYS, *Treasurer.*

The foregoing Accounts have been examined, and the Balance found to be correctly stated at £258 5s. 3d.

| | |
|---|---|
| GEORGE J. ALLMAN, | FREDERICK CURREY, |
| ROBERT BENTLEY, | R. C. A. PRIOR. |
| T. SPENCER COBBOLD, M.D., | |

May 20, 1878.

The Secretary reported that the following Members had died, or their deaths had been ascertained, since the last Anniversary, viz.:—

### Fellows (10).

Henry Adams, Esq.*
Robert Heward, Esq.*
John Henry Lance, Esq.
William Arnold Lewis, Esq.
Andrew Murray, Esq.*
Thomas F. Robinson, Esq.
William Rodwell, Esq.
Henry Fox Talbot, Esq.*
Thomas Thomson, M.D.*
J. V. Wollaston, Esq.*

### Foreign Members (4).

Dr. Elias Magnus Fries.*
Prof. Filippo Parlatore.*
Dr. Roberto de Visiani.*
Dr. Hugh Algernon Weddell.*

Also that the following Fellows had withdrawn:—

D. G. Elliot, Esq.
J. M. Jones, Esq.,
Rev. T. A. Marshall.
Richard Mestayer, Esq.
General Sir Edward Sabine.
S. N. Ward, Esq.
Edward Woakes, M.D.

And that 38 Fellows and 5 Foreign Members had been elected since the last Anniversary.

The President then opened the business of the day, and the Members present proceeded to ballot for the Council and Officers for the ensuing year.

The Ballot for the Council having closed, the President appointed Dr. Braithwaite, Dr. Collingwood, and Dr. Trimen to be Scrutineers to examine the lists and report the result. The votes having been counted and reported to the President, he declared the following Members to be removed from the Council, viz.:—

J. G. Baker, Esq., W. B. Carpenter, M.D., Henry Lee, Esq., W. K. Parker, Esq., S. J. A. Salter, Esq.

And the following to be elected into the Council, viz.:—
John Ball, Esq., Thomas Boycott, M.D., F. DuCane Godman, Esq., Albert Günther, M.D., Rev. George Henslow.

The Ballot for the Officers having also closed, the President appointed the same Scrutineers to examine the lists and report the result. The votes having been counted and reported to the President, he declared the following to be elected, viz.:—*President*, Prof. G. J. Allman, M.D.; *Treasurer*, J. Gwyn Jeffreys, LL.D.; *Secretaries*, Frederick Currey, M.A., and St. George J. Mivart, Esq.

the Society be given to Dr. Allman for his excellent Address, and that he be requested to allow it to be printed. [It will be found in the Journal, Zoology (No. 78), xiv. pp. 489–505.]

## June 4th, 1878.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

Charles Bailey, Esq., William E. Balston, Esq., Alexander Craig Christie, Esq., and George Robert Milne Murray, Esq., were elected Fellows.

Dr. Prior, F.L.S., exhibited a sample of Bath Asparagus, consisting of the unexpanded flowering-spikes of *Ornithogalum pyrenaicum*, which had been largely employed for culinary purposes.

Mr. Percy Sladen, F.L.S., exhibited Echinoderms from the Korean seas, in illustration of his paper.

Specimens of the so-called "Coffee-leaf Disease" (*Hemileia vastatrix*) were exhibited by the Rev. R. Abbay, in illustration of his paper.

The following papers were read :—

1. "Note on *Pinguicula grandiflora*." By Dr. Allman, F.R.S., President.
2. "Observations on *Hemileia vastatrix* (the Coffee-leaf Disease)." By the Rev. R. Abbay, M.A. Communicated by W. T. Thiselton Dyer, F.L.S.
3. "On the Asteroidea and Echinoidea of the Korean Seas." By W. Percy Sladen, F.L.S.
4. "On the Korean Ophiuroidea." By P. M. Duncan, M.B. Communicated by W. P. Sladen, F.L.S.

## June 20th, 1878.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

William Cattell, Esq., was elected a Fellow.

The President nominated George Busk, Esq., William Carruthers, Esq., Lieut.-Col. Grant, and John Gwyn Jeffreys, LL.D., Vice-Presidents for the ensuing year.

Dr. Gwyn Jeffreys exhibited specimens of *Virgularia* dredged by himself and the Rev. A. M. Norman in the Oyster fiord, Norway. These appear to belong to a new species, to be hereafter described by Dr. Danielssen.

Mr. J. R. Jackson, A.L.S., exhibited three Gourds from Pekin, the fruits of a *Lagenaria*, probably *L. vulgaris*, which appeared to have been ornamented by artificial means while in the growing state.

The following papers were read:—

1. "Notice of some Shells dredged by Captain St. John, R.N., in the Korean Strait." By J. Gwyn Jeffreys, LL.D., F.L.S.

2. "On two kinds of Dimorphism in the Rubiaceæ." By C. B. Clarke, F.L.S.

3. "On the Presence of *Tachyglossus* and *Ornithorhynchus* in N. and N.E. Queensland." By Captain W. E. Armit, F.L.S.

4. "Remarks on the Skull of the *Echidna* sent by Captain Armit." By James Murie, M.D., F.L.S.

5. "On the Stapeliæ of Thunberg's Herbarium, with Descriptions of new Species." By N. E. Brown, Esq. Communicated by Prof. Oliver, F.L.S.

6. "Observations on the White Whale (*Beluga leucas*) exhibited at the Westminster Aquarium." By James Murie, M.D., F.L.S.

7. "Structure of the Shell of Bryozoa" (in Abstract). By A. W. Waters, F.L.S.

# PROCEEDINGS

OF THE

# LINNEAN SOCIETY OF LONDON.

## (SESSION 1878–79.)

### November 7th, 1878.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

The Rev. William Weekes Fowler, M.A., Wilfred Hudleston, Esq., and Thomas Moss Shuttleworth, Esq., were elected Fellows.

A Portrait in Oil of the Rev. M. J. Berkeley, M.A., F.L.S., by Mr. Peel, was presented by Sir J. D. Hooker, on the part of the Subscribers; and the Special Thanks of the Society were voted for this very valuable and acceptable Donation.

Dr. Prior, F.L.S., exhibited a branch of the *Colletia cruciata*, Hook. (*C. bictonensis*, Lindl.), covered with flowers, which had been produced in the open air, at the Rev. W. Sotheby's, Langford Budville, Wellington, Somerset.

Dr. Boycott, F.L.S., exhibited a mass of a species of *Nitella* obtained in June last from a dried-up pond in St. Leonard's Forest, Sussex, where it covered some acres.

Mr. Thomas Christy, F.L.S., exhibited living plants of India-rubber trees (*Urostigma Vogelii*), and a plant from the West Coast of Africa said to produce a good Rubber; also the fruit, leaves, and flower-stem of *Landolphia florida*.

Dr. Masters, F.L.S., read an extract of a letter from Dr. O. Beccari, describing a gigantic Aroid found by him in Sumatra, growing side by side with *Rafflesia Arnoldi*. The plant resembles an *Amorphophallus*, and has a large tuber 5 feet round, from which is pushed up a single leaf, with a divided blade, covering an area of 45 feet. Seedlings have been raised in the garden of the Marquis Corsi Salviato at Florence.

The following papers were read:—

1. "Notes on Euphorbiaceæ." By G. Bentham, F.R.S., F.L.S.

2. "On the Existence of *Carpesium cernuum*, Willd., in Queensland." By L. A. Bernays, F.L.S.

3. "Notes on Cleistogamic Flowers, chiefly of *Viola*, *Oxalis*, and *Impatiens*." By A. W. Bennett, M.A., F.L.S.

4. "Descriptions of New Hemiptera." By F. Buchanan White, M.D., F.L.S.

5. "On the Absorption of Rain and Dew by the Green Parts of Plants." By the Rev. George Henslow, M.A., F.L.S.

### November 21st, 1878.

J. Gwyn Jeffreys, LL.D., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

Thomas Davidson, Esq., and Frederick James Faraday, Esq., were elected Fellows.

Dr. W. P. Kesteven exhibited specimens of *Melocactus*, one of which had developed additional lobes while kept in a dry place in his own house at Holloway; the other a transverse section of the flowering spike of *Melocactus communis*.

Mr. Irwin Lynch exhibited tendrils of *Vitis cuspidata* and other species, to illustrate his paper.

The following papers were read:—

1. "On Branch-tubers and Tendrils in *Vitis gongylodes*." By R. Irwin Lynch. Communicated by Dr. Murie, F.L.S.

2. "Preliminary Report on the Mollusca of the 'Challenger' Expedition."—Parts I. & II. (viz. the genera *Dentalium*, *Siphodentalium*, and *Cadulus*). By the Rev. R. Boog Watson, F.L.S.

3. "On the Symplocaceæ." By John Miers, F.R.S., F.L.S.

4. "Notes on Algæ from Lake N'yassa, E. Africa." By Prof. Dickie, F.L.S.

### December 5th, 1878.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

George Francis Dowdeswell, Esq., Thomas Hanbury, Esq., Arthur Hammond, Esq., Joseph Sidebotham, Esq., William Thomson, Esq., and Charles Augustus Wright, Esq., were elected Fellows.

Mr. E. Holmes, F.L.S., exhibited and read a short Note on a new British Moss (*Aulacomnium turgidum*), discovered at Whernside in Yorkshire by Mr. West and Dr. F. A. Lees.

The following papers were read:—

1. "New Coleoptera of Geographical Interest (collected by Charles Darwin, Esq., F.R.S.)." By F. H. Waterhouse, Esq. Communicated by Dr. Murie, F.L.S.

2. "Note on [Dimorphism in] *Gardenia turgida*." By C. B. Clarke, F.L.S.

3. "Geographical Distribution of Indian Freshwater Fishes."—Part III. and conclusion. By Dr. Francis Day, F.L.S.

4. "Mollusca of the 'Challenger' Expedition."—Part III. By the Rev. R. Boog Watson, F.L.S.

### December 19th, 1878.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

J. Lawrence Hamilton, Esq., James J. MacAndrew, Esq., and Francis Maule Campbell, Esq., were elected Fellows.

The following papers were read:—

1. "Note on South-African Orchids." By W. Mansel Weale, Esq. Communicated by Sir John Lubbock, Bart., M.P., F.R.S., F.L.S.

2. "Descriptions of two Rare Shells." By Sylvanus Hanley, F.L.S.

The President made some remarks on the Relations of *Rhabdopleura*.

### January 16th, 1879.

William Carruthers, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

George Brook, Esq., John Edward Griffiths, Esq., Arthur Pearson Luff, Esq., Charles Sharp, Esq., and John Woodland, Esq., were elected Fellows.

Professor Allen Thomson exhibited, and made some remarks on, a specimen of wood containing a bone imbedded in it. He also showed a frond of a Palm (*Chamærops*) said to have been found within a plank of rosewood.

Mr. Christy made some remarks on *Gynocardia odorata*; among other qualities, being a specific in rheumatism.

The following paper was read:—

1. "A Synopsis of the Colchicaceæ and aberrant Tribes of Liliaceæ." By J. G. Baker, F.R.S., F.L.S.

## February 6th, 1879.

Prof. G. J. ALLMAN, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read aud signed.

Mr. J. R. Jackson exhibited a collection of Fruits, Seeds, &c. from the tombs of Ancient Thebes. Among these were fruits of two species of Doum Palm (*Hyphæne thebaica* and of *H. Argun*), this latter formerly and erroneously described as an *Areca*. Some small berries were also identified with those of *Juniperus phœnicea*.

Mr. J. G. Baker showed dried specimens of the Bulb *Buphane toxicaria*, which furnishes one of the ingredients of the poison used by the Bushmen to tip their arrows. The bulb is remarkable for its numerous tunics, and its geographical range, as now known, is from Cape Karroo to Tanganyika.

Mr. W. Thiselton Dyer drew attention to the chief features of a new fodder Grass, *Euchlæna luxurians*; he also exhibited instruments used for weaving fibre of *Curculigo latifolia* by the natives of Borneo.

Mr. T. Christy showed a sample of Tea grown at Natal; and likewise a bottle of the fresh-drawn India-rubber secretion of a species of *Landolphia*.

The Rev. G. Henslow passed round for examination a reputed female Mistletoe bearing male shoots, which was regarded as probably an androgynous condition rather than a male parasitic on a female plant.

Mr. R. Irwin Lynch exhibited a series of specimens of parts of *Acacia sphærocephala*, *Cecropia peltata*, and two Orchids (*Epidendrum bicornutum* and *Schomburgkia tibicina*), as exemplifying their economy in affording hollows of protection and so-called food-bodies for ants.

The following papers were read:—

1. "Note as to the Position of the Genus *Seguenzia* among the Gastropoda." By J. Gwyn Jeffreys, LL.D., F.R.S., F.L.S.
2. "On the Anatomy of Ants." By Sir John Lubbock, Bart., M.P., F.R.S., F.L.S.
3. "On the Habits of Ants, Bees, and Wasps."—Part VI. By the same.

## February 20th, 1879.

Prof. G. J. ALLMAN, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

The Rev. G. Henslow, exhibited a portion of the bough of an Elm with a small pulley imbedded in the centre of the wood. The rings of growth excentrically deposited indicated a period of 13 years' growth subsequent to the entrance of the foreign body, and exteriorly all marks of its presence were completely obliterated.

A series of rare Birds was shown by Mr. R. Bowdler Sharpe. Among the forms from New Guinea were skins of *Paradisea Raggiana*, male and female, collected by the Rev. Mr. Lawes. Among others obtained in the Fijis by the Baron A. von Hügel, were species of the genus *Pinarolestes*, which are also found on Tutuela, one of the Samoan Islands.

Mr. W. Hood Fitch drew attention to a coloured drawing, of natural size, of one of the remarkable crimson-coloured Pitchers of *Nepenthes sanguinea* from Malacca. This cylindrical pitcher measured 12 inches long by 9 inches in circumference, and was grown at Bury by Mr. O. Wrigley.

The following papers were read:—

1. "Note on the Genus *Oudneya*, Brown." By Henry Trimen, M.B., F.L.S.
2. "On some South-American Genera of Plants of Uncertain Position &c." By John Miers, F.L.S. &c.
3. "On the Inflorescence of Crassulaceæ." By Dr. Maxwell T. Masters, F.L.S. &c.

## March 6th, 1879.

William Carruthers, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

J. Reay Greene, M.D., Robert Johnston, Esq., P. H. Stokoe, Esq., B. S. Williams, Esq., and James Wood-Mason, Esq., were elected Fellows.

Mr. Thomas Christy exhibited a set of specimens of Pituri from Australia. He also showed a recent volume by M. Vétillart on a system of examining sections of fibres under the microscope. Lastly, he directed attention to a small-sized Os sepia of an unknown species of Australian Cuttle-fish collected by Dr. Bancroft.

Examples of Bryozoa penetrated by Algæ were exhibited under the microscope by Mr. Arthur W. Waters, these bearing on a paper on the subject by Dr. Reinsch.

The Vice-President announced from the Chair that an alteration in certain Sections of Chapter XIII. of the Bye-Laws had been proposed by the Council, and when written out would be duly hung up in the Common Meeting-Room, and read at successive Meetings, and finally put to the Ballot, according to the terms of the Charter.

The Secretary read two letters forwarded from Messrs. Travers and Son (City) referring to the marked (4 to 12 per cent.) increased production of Beet-Root Sugar abroad by the careful artificial selection of plants. On the contrary, the percentage of sugar in the Sugar-cane is said to remain stationary, and possibly by its continuous stolon-multiplication is subject to various diseases. The question remains, whether selection of the Sugar-cane might not give good results; and is thus suggested to botanists and others interested.

The following papers were read:—

1 "On Entozoic Florideæ growing in living Bryozoa and Sponges." By Dr. P. F. Reinsch. Communicated by Sir J. D. Hooker, F.L.S.

2. "On the Classification of the Maioid Crustacea or Oxyrhyncha." By E. J. Miers, F.L.S.

3. "On the Fruiting of *Wistaria sinensis*." By W. T. Thiselton Dyer, F.L.S.

March 20th, 1879.

William Carruthers, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

The Rev. George Edward Comerford-Casey, M.A., was elected a Fellow.

Mr. W. T. Thiselton Dyer exhibited *Helichrysum vestitum*, a perennial Everlasting from the Cape of Good Hope.

The following papers were read:—

1. "On New Aculeate Hymenoptera from the Sandwich Islands." By Frederick Smith. Communicated by A. G. Butler, F.L.S.

2. "Reproduction of Ferns by Budding." By T. R. Sim. Communicated by Prof. J. W. H. Trail, F.L.S.

3. "Ornithology of South-east New Guinea." By R. B. Sharpe, F.L.S.

The Vice-President then read from the Chair the following alterations in Bye-Laws (Chapter XIII.) proposed by the Council, viz.:—

In Section V. the words "if approved by the Members present, shall" to be inserted. Thus Section V. will read:—

V. When the Chair shall have been taken, the Minutes of the preceding Meeting shall be immediately read, and, *if approved by the Members present, shall* be signed by the Chairman of the Meeting, and the presents on the table shall be declared.

VI. to remain as at present.

The following new Bye-Law to be inserted as follows:—

VII. Any proposal relating to the affairs of the Society, and not affecting Elections or the Bye-Laws, may be brought forward if the same be put into writing, and signed by three or more Fellows, and delivered to the Secretary. The Secretary shall read the proposal at the next Meeting immediately after the declaration of the presents. The proposal shall then be hung up in the Meeting-Room until the second Meeting after the reading of the same, when it shall be put to the Ballot unless those who have signed it shall agree to withdraw it.

The present Section VII. of the printed Bye-Laws to be numbered Section VIII.

## April 3rd, 1879.

William Carruthers, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

Ferdinand Coles, Esq., W. A. Forbes, Esq., and N. S. Whitney, M.B., were elected Fellows.

The Vice-President then read from the Chair for the second time the proposed alterations and new Bye-Law (Chapter XIII., Section 7).

Mr. W. T. Thiselton Dyer exhibited the inflorescence of *Gynerium saccharoides*, H. B. K., grown at Kew, but which had died during the inclement winter-weather. Excepting through Mr. Spruce's researches on the Amazons, little is known respecting this handsome plant, which differs from the Pampas Grass in habit, and is tropical like Maize &c.

Dr. Henry Trimen, in dealing with the subject of the Myrrhs of commerce and pharmacy, showed a unique specimen of *Balsamodendron Myrrha*, Nees. It was gathered by Hildebrandt in Somali Land, 1873, and possesses few leaves and a single fruit; but the myrrh was seen exuding from the tree. The original type specimens of *B. Myrrha*, collected by Prof. Ehrenberg in Arabia, were also exhibited; and, according to Dr. Trimen, Hildebrandt's late statement of their identity with the foregoing seems well founded. Ehrenberg's other Myrrh-plant, the *B. Ehrenbergianum*, Berg, with his notes attached, and the *B. Playfairii*, Hook. fil., from Somali Land, with its gum called "Hotari," and other examples of Myrrh and Bdellium were placed before the Society.

The following papers were read:—

1. "Account of a Peat-flood in the Falkland Islands." By Arthur Bailey. Communicated by W. T. Thiselton Dyer, F.L.S.
2. "Notes on *Moquilea*, with a Description of a new Species." By John Miers, F.R.S., F.L.S.

## April 17th, 1879.

Colonel Grant, C.B., F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

S. M. Curl, Esq., M.D., and G. C. Druce, Esq., were elected Fellows.

The Vice-President, on behalf of the Council, proposed Dr. Thomas Boycott and Dr. R. C. A. Prior for the Council, and Mr. W. S. Dallas and Mr. J. Edmund Harting to represent the Society, as Members of the Committee for auditing the Treasurer's Account; and a show of hands having been taken, these gentlemen were declared to be elected.

The alterations in the Bye-Laws (Chapter XIII.) proposed by the Council on the 20th of March, having been hung up in the Common Meeting-Room of the Society and read by the President or Vice-President in the Chair, according to the terms of the Charter, at the last two successive General Meetings of the Society, were put to the Ballot, and rejected by the Fellows at large.

The following papers were read:—

1. "Contributions to the Ornithology of New Guinea."—Part V. By R. B. Sharpe, F.L.S.
2. "On the Occurrence of *Gadus macrocephalus* at the Mouth of the Thames." By Dr. Francis Day, F.L.S.
3. "Zoological Memoranda of Nile Land." By Dr. Murie, F.L.S.

## May 1st, 1879.

Colonel Grant, C.B., F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

J. E. Brown, Esq., Richard Rimmer, Esq., P. O'Shanesy, Esq., were elected Fellows; and Dr. Edward Bornet and Prof. H. G. Reichenbach were elected Foreign Members.

The Vice-President called attention to a series of Botanical Diagrams presented by the authors (Dr. Arnold and Carolina Dodel-Port).

Mr. Edward S. Morris of Liberia exhibited a quantity of husked and unhusked Berries and ground Coffee of the *Coffea liberica* grown by him near Monrovia.

Mr. W. T. Thiselton Dyer showed a living example of the rare and curious *Welwitschia mirabilis* grown at Kew.

There was also on the table a series of specimens to illustrate the papers on *Linum* and *Wistaria* by Mr. Meehan and the Rev. G. Henslow.

The following papers were read:—

1. "Nutrition and Fertilization of Flowers." By T. Meehan. Communicated by the Rev. G. Henslow, F.L.S.
2. "Remarks on Meehan's Paper." By the Rev. G. Henslow, M.A., F.L.S.
3. "On a Restiaceous Plant from Cochin China." By M. T. Masters, M.D., F.R.S., F.L.S.
4. "On the Structure of the Pouched Rats of the genus *Heteromys*." By Dr. Murie, F.L.S.

## May 24th, 1879.

### *Anniversary Meeting.*

Prof. G. J. **Allman**, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

The Treasurer reported the state of the Accounts as follows (see p. xlvi).

The Secretary reported that the following Members had died, or their deaths been ascertained, since the last Anniversary, viz.:—

FELLOWS (12).

Rev. James Bedingfeld.
Jacob Bigelow, M.D.*
William Coulson, Esq.
Rev. Tullie Cornthwaite.
Richard Davis, Esq.
W. C. Hewitson, Esq.*
J. S. Roe, Esq.
G. D. Rowley, Esq.*
A. Thozet, Esq.
N. C. Tuely, Esq.
Marquis of Tweeddale.*
T. W. Wonfor, Esq.

FOREIGN MEMBER (1).

Prof. Grisebach.*

ASSOCIATE (1).

Mr. William Mudd.*

That the following Fellows had withdrawn, viz.:—

J. Kinton Bond, Esq.
W. Duppa Crotch, Esq.
J. C. Mellis, Esq.

And that 41 Fellows and 2 Foreign Members had been elected since the last Anniversary.

The President then opened the business of the day, and the Fellows present proceeded to Ballot for the Council and Officers for the ensuing year.

The Ballot for the Council having closed, the President appointed Mr. Stainton, Rev. G. Henslow, and Dr. Trimen as Scrutineers. The votes having been counted and reported to the President, he declared the following Members to be removed from the Council, viz.:—

George Busk, F.R.S., Lieut.-Col. Grant, C.B., Robert Hudson, Esq., John Millar, M.D., R. C. A. Prior, M.D.

And the following to be elected into the Council, viz.:—

Frank Crisp, LL.B., Rev. J. M. Crombie, W. S. Dallas, Esq., Arthur Grote, Esq., Robert M<sup>c</sup>Lachlan, Esq.

The Ballot for the Officers having also closed, the President appointed the same Scrutineers. The votes having been counted and reported to the President, he declared the following to be

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* For reference to notice, see Index.

## *Receipts and Payments of the Linnean Society, from May 1, 1878, to April 30, 1879.*

| | £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|
| Balance in the hands of the Bankers at the last Audit ... | | | | 258 | 5 | 3 |
| Admission Fees .................................. | 228 | 0 | 0 | | | |
| Compositions .................................. | 390 | 0 | 0 | | | |
| Annual Contributions of £2 2s. ............ | 6 | 6 | 0 | | | |
| Do. do. £3 0s. ............ | 817 | 16 | 0 | | | |
| Transactions, Journal, &c. sold.............. | 241 | 19 | 5 | | | |
| Interest on Consols, &c. ........................ | 122 | 4 | 4 | | | |
| | | | | 1806 | 5 | 9 |
| | | | | £2064 | 11 | 0 |

| | £ | s. | d. |
|---|---|---|---|
| Taxes and Insurance.............................................. | 14 | 8 | 9 |
| Repairs and Furniture.............................................. | 7 | 10 | 6 |
| Coals, Gas, Tea, Postage, &c. ................................ | 167 | 16 | 4 |
| Salaries .............................................................. | 420 | 0 | 0 |
| Expenses of Society's Publications .......................... | 1100 | 5 | 1 |
| Books purchased ................................................ | 93 | 16 | 9 |
| Bookbinding and Stationery .................................. | 35 | 14 | 9 |
| Commission ........................................................ | 17 | 3 | 0 |
| | £1856 | 15 | 2 |
| Balance carried forward to the new account.............. | 207 | 15 | 10 |
| | £2064 | 11 | 0 |

J. GWYN JEFFREYS, *Treasurer.*

The foregoing Accounts have been examined, and the Balance found to be correctly stated at £207 15s. 10d.

THOMAS BOYCOTT, M.D.,
R. C. A. PRIOR, M.D.,
W. S. DALLAS,
J. E. HARTING.

June 19, 1879.

elected, viz.:—*President*, Prof. G. J. Allman, M.D.; *Treasurer*, J. Gwyn Jeffreys, LL.D.; *Secretaries*, Frederick Currey, Esq., and St. George J. Mivart, Esq.

After the reading of the President's Address, it was moved by Prof. Busk, and resolved, That the thanks of the Society be given to Dr. Allman for his excellent Address, and that he be requested to allow it to be printed. [It will be found in the Journal, Zoology (No. 81), xv. pp. 1–8.]

Mr. Stainton proposed, and Sir John Lubbock seconded, a vote of thanks to Mr. Kippist in consideration of his long and faithful services to the Society, while expressing regret at his illness during the last winter. This was carried unanimously.

### June 5th, 1879.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

Mr. A. D. Michael was elected a Fellow.

The President according to Charter nominated as Vice-Presidents for the ensuing year:—Mr. J. Ball, Mr. W. Carruthers, Mr. A. Grote, Dr. J. Gwyn Jeffreys.

The President called attention to an article "On Cinchona in India," by John Eliot Howard, F.L.S., which extract from the 'Gardener's Chronicle' was placed on the table for perusal.

The following papers were read:—

1. "On the Morphology of the Skull in the Amphibia Urodela." By Prof. W. K. Parker, F.R.S., F.L.S.
2. "On the Lichens of the English Polar Expedition, 1875–76." By Prof. Theodore M. Fries. Communicated by Sir J. D. Hooker, F.L.S.
3. "Mollusca of the 'Challenger' Expedition."—Part IV. By the Rev. R. Boog Watson, F.L.S.
4. "On a new Species of *Helvella*." By William Phillips, F.L.S.
5. "Ferns of Northern India." By Charles B. Clarke, F.L.S.

### June 19th, 1879.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

Charles Holme, Esq., was elected a Fellow.

The following papers were read:—

1. "On a remarkably Branched *Syllis* dredged in the 'Challenger' Expedition." By Dr. W. C. M'Intosh, F.R.S., F.L.S.
2. "Remarks on *Carpesium* as Indigenous to Australia." By F. Manson Bailey, F.L.S.

3. "On the Thorax of the Blow-Fly." By Arthur Hammond, F.L.S.

4. "Enumeration of Australian Lichens in the Herbarium of Robert Brown, with Descriptions of new Species." By the Rev. J. M. Crombie, F.L.S.

5. "On Recent Species of *Heteropora*." By Prof. George Busk, F.R.S., F.L.S.

6. "Contribution to the Flora of Northern China." By J. G. Baker, F.R.S., F.L.S., and S. Le Marchant Moore, F.L.S.

7. "Reply to Dr. Stirton's Remarks on my Paper on the 'Challenger' Lichens." By the Rev. J. M. Crombie, F.L.S.

8. "The Species of *Phryganea* described by Linnæus in his 'Fauna Suecica.'" By Pastor H. D. J. Wallengren. Communicated, with Notes, by R. McLachlan, F.R.S., F.L.S.

9. "On the Bell-Bird." By Dr. James Murie, F.L.S.

# PROCEEDINGS

OF THE

# LINNEAN SOCIETY OF LONDON.

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(SESSION 1879–80.)

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### November 6th, 1879.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

William Harper Twelvetrees, Esq., was elected a Fellow.

The President, in opening the Session, made a few obituary remarks on Mr. John Miers and Mr. William Wilson Saunders, both very old and respected Fellows of the Society. He then called attention to the volumes on the table, viz.: Stein's 'Infusoria,' presented by Prof. Reay Greene, F.L.S., and Hussey's 'Mycological Illustrations,' presented by Thomas Walker, F.L.S.

Mr. W. T. Thiselton Dyer brought forward to the Fellows' notice a series of Photographs of Vegetation (including *Cinchona Ledgeriana*) in the Botanic Gardens of Buitenzorg, Java.

Some stereoscopic photographs, taken by Mr. F. H. Worsley-Benison, of Chepstow, Monmouthshire, were exhibited by W. A. Shoolbred, F.L.S.

The following papers were read:—

1. "On the Structure and Habit of *Hemileia vastatrix*." By D. Morris, Esq. Communicated by W. T. Thiselton Dyer, F.L.S.

(A Note from the Rev. R. Abbay referring to Mr. Morris's paper was read by the Secretary.)

2. "Instincts and Emotions of Fish." By Dr. Francis Day, F.L.S.

## November 20th, 1879.

Prof. G. J. ALLMAN, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

Mr. Winslow Jones and Mr. William Wickham were elected Fellows.

Sir Joseph D. Hooker, C.B., exhibited a specimen of a Cedar from the Island of Cyprus, to which, from the shortness of its leaves and smallness of the female cones, the name *Cedrus Libani* var. *brevifolia* is applicable. In a paper accompanying the exhibition, Sir J. D. Hooker mentioned that the discovery of this variety of the Cedar of Libanus was due to Sir Samuel Baker, F.R.S., a letter from whom was read. The monks of "Troodi-tissa" informed the latter of its existence in the mountains, and believed it to be the "*Chittim wood*" of Scripture.

In comparison with the above, the President laid on the table specimens of *Cedrus Deodara* from the garden of Mrs. Ciciopieri St. Clair, Parkstone, Dorset, and showing cones produced this summer.

Mr. E. M. Holmes, in exhibiting a series of slides under the microscope of rare British Lichens, Hepaticæ, and Freshwater Algæ, mentioned that *Placodium Cesatii* of Leighton's 'Lichen Flora' is, according to Dr. Nylander, but a form of *P. candicans*. The Alga choking up the filter-beds at Bradgate, Leicester, was shown to be, as yet, undescribed, and resembling *Zooglœa*, though the Rev. M. J. Berkeley had stated it to be probably the common *Echinella articulata*.

Mr. Holmes likewise exhibited the Leaves, Flowers, and portion of the Trunk of the tree (*Andira Araroba*) yielding Goa-powder. Quite recently it has been found that the Cane comes from Bahia by way of Lisbon, and thence is exported to the East. The secretion appears to corrode and destroy the woody tissue, and ultimately itself becomes deposited, and fills the cavities of the heart-wood. It is stated to be a specific for Ringworm.

Mr. Christy exhibited a bottle of Chrysophanic Acid also obtained from the above-mentioned tree. He likewise called attention to two skulls of Australian Natives forwarded by Dr. Bancroft which had occipital thickening, supposed to be induced by blows of the knobkerries.

The following papers were read:—

1. "Development of the Embryo-sac in Phanerogams." By Marshall Ward, Esq. Communicated by W. T. Thiselton Dyer, F.L.S.

2. "Extinct Land-Tortoises of Mauritius and Rodriguez." By

## December 4th, 1879.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

John Cameron, Esq., Major Collett, H. B. Spotton, Esq., J. G. Otto Tepper, Esq., G. M. Thomson, Esq., Sir Samuel Wilson, and Samuel Wright, Esq., were elected Fellows.

Mr. W. Carruthers exhibited a bottle of Pteropods, *Spiralis retroversus*, obtained in great abundance on the surface of the water of the Gareloch, Ross-shire, Scotland, in July 1879, by Dr. John Grieve. A Letter from the latter was read, wherein he gave a description of some of the habits of these animals as observed immediately after their capture; and he likewise mentioned other facts in connexion with *Flustra foliacea* and *F. truncata*.

Dr. Maxwell Masters exhibited specimens of Spruce and Silver Firs, as illustrating points in his paper.

The following papers were read:—

1. "On the Internal Structure and Movements in Leaves of Conifers." By Maxwell T. Masters, M.D., F.R.S., F.L.S.
2. "On a Synthetic Form of Ophiurid from the Atlantic, the observations therein being founded on a specimen dredged by Dr. G. C. Wallich in the Voyage of H.M.S. 'Bulldog,' 1860." By Prof. Martin Duncan, F.R.S. Communicated by Dr. Murie, F.L.S.
3. "On Indian Begonias." By C. B. Clarke, M.A., F.L.S.

## December 18th, 1879.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

Henry Seebohm, Esq., was elected a Fellow.

A. Dee Bartlett, Esq., Nicholas E. Brown, Esq., and Frederick Herschel Waterhouse, Esq., were elected Associates.

Mr. B. Daydon Jackson exhibited a complete series of the various (5) editions of Dillenius's 'Historia Muscorum,' Oxford, 1741, and its reprint Edinburgh, 1811, from the Society's Library and his own, in illustration of the paper to be read by the Rev. J. M. Crombie.

Photographs of Botanical subjects were shown by Mr. W. A. Shoolbred on behalf of Mr. F. H. Worsley-Benison of Chepstow.

The following papers were read:—

1. "On the Lichens of Dillenius's 'Historia Muscorum,' as illustrated by his Herbarium." By the Rev. J. M. Crombie, M.A., F.L.S.
2. "On certain remarkable Sense-Organs among the Hydroids." By Prof. Allman, M.D., F.R.S., Pres. L.S.

## January 15th, 1880.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

John Poland, Esq., R. Darell Stephens, Esq., and Prof. Allen Thomson were elected Fellows.

Thomas Jeffery Parker, Esq., was elected an Associate.

Mr. Allen J. Hewitt exhibited specimens of Moths of the genus *Anaphe*, and a large common-web or community of Cocoons recently imported from Old Calabar (West Coast of Africa). The moths had emerged from the cocoons of the sac-like body on reaching this country.

Mr. J. G. Baker made a few remarks on a monstrous Thistle obtained by the Rev. T. A. Preston of Marlborough. In this specimen of *Carduus crispus* the capitula were abnormally numerous and aggregated in secondary heads, as in *Echinops*.

There was exhibited, on behalf of Mr. James Forsyth, the Tibia and Tarsus of a *Dinornis maximus*, obtained at a depth of 4 feet from the surface of the soil while making a road at Omaru, New Zealand.

The following papers were read:—

1. "Remarks on the Birds and Mammals introduced into New Zealand." By H. M. Brewer, Hon. Sec. Wanganui Acclimatization Society, New Zealand. Communicated by Dr. Murie, F.L.S.
2. "Synopsis of the Aloineæ and Yuccoideæ." By J. G. Baker, F.L.S.

## February 5th, 1880.

William Carruthers, Esq., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

Mr. Charles Stewart showed a microscopic stained section of the Ovary of *Hyacinthus orientalis* with the intra-nuclear network in the cells of the ovules.

Dr. Francis Day exhibited examples of Salmonidæ, some of which had been reared under natural, and others under unnatural conditions. A *Salmo fontinalis*, which had passed its existence in the Westminster Aquarium, had the head preternaturally elongated and a very narrow suboperculum, thus showing a great contrast to examples reared from the same batch of imported eggs, and kept in a wild state in Cardiganshire.

Mr. R. Irwin Lynch brought under notice a mounted specimen of the Pods of *Acacia homalophylla*, each seed being attached by a very long bright-red funicle.

Mr. A. Hammond exhibited a larva of *Tanypus maculatus*. He observed that the coronet and appendages of the thoracic and anal regions had been said to be homologous with the respiratory organs of the larva and pupa of gnats &c. This he doubted, inasmuch as, besides the absence of tracheæ, the former originated from the ventral and not the dorsal surface. He also stated his opinion that the two oval bodies in the thorax of the larva, the so-called "air-reservoirs" of De Geer, were probably salivary glands similar to those of the Crane-Fly.

The following papers were read:—

1. "On Commelinaceæ." By C. B. Clarke, F.L.S.
2. "On the Salmonidæ and other Fish introduced into the New-Zealand Waters." By H. M. Brewer, Hon. Sec. Wanganui Acclimat. Soc. N. Z. Communicated by Dr. Murie, F.L.S.

## February 19th, 1880.

William Carruthers, Esq., Vice-President, in the Chair.

The Minutes of the last Meeting were read and signed.

Mr. Edwin Simpson-Baikie was elected a Fellow.

Mr. James Britten exhibited specimens of the stems of *Myrmecodia echinata* and *M. glabra* recently sent from Borneo by Mr. H. O. Forbes, showing the galleries formed by a species of Ant allied to, if not identical with, *Pheidole javana*, Mazo. Very young plants of one of the species of *Myrmecodia* were also exhibited, all of which had been attacked by ants.

Dr. Maxwell Masters brought forward an example of Pitcher-plant, *Nepenthes bicalcarata*, from Borneo; and he read a Note thereon from Mr. Burbidge. It seems these pitchers are perfect traps to creeping insects by reason of the incurved ridges round the throat of the pitchers. Taking advantage of this, a certain species of Black Ant perforates the stalk, and so provides an inroad on the sumptuous fare of dead and decaying insects and water contained in the floral reservoir. The remarkable Lemuroid, *Tarsius spectrum*, likewise visits the Pitcher-plants for the sake of the entrapped insects. These it can easly obtain from the *Nepenthes Rafflesiana*, but not so from the *N. bicalcarata*, where the sharp spurs severely prick if the animal dares to trifle with the urn-lid.

The following paper was read:—

1. "On the Flora of the Kuram Valley, Afghanistan." By Dr. J. E. T. Aitchison, F.L.S.

### March 4th, 1880.

Prof. G. J. **Allman**, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

S. D. Bairstow, Esq., J. T. Carrington, Esq., Prof. P. Martin Duncan, M.B., R. M. Middleton, Esq., S. O. Ridley, Esq., and T. Charters White, Esq., were elected Fellows.

Mr. Middleton exhibited two adult Skulls of *Babirussa alfurus*, Less., from Borneo, both distinguishable by the remarkable smallness of their tusks.

Dr. Günther brought forward two deep-sea fishes obtained during the 'Challenger' expedition, viz. *Echiodon* and *Scopelus*, to illustrate two kinds of luminous metameric organs first distinguished by Dr. Ussow, and designated as the "*lenticular*" and "*glandular*" kinds. Whilst admitting the great morphological resemblance of the former to an eye, Dr. Günther gave reasons for showing that their structure is not opposed to the view that they, like the glandular kinds, are producers of light, and that probably this production of luminosity or light is subject to the will of the fish.

Mr. J. Jenner Weir, on behalf of Mr. Edward A. Nevill, showed the stuffed head of a Prong-buck (*Antilocapra americana*), shot by the latter in the Rocky Mountains, August 1876. On the median nasal region of this specimen what appeared to be a short unbranched third horn was developed.

The following papers were read:—

1. "On *Codiolum gregarium*, A. Braun, a new British Alga discovered at Teignmouth by the Rev. R. Cresswell." By E. M. Holmes, F.L.S.
2. "On the Hebridal Argentine." By Dr. Francis Day, F.L.S.

### March 18th, 1880.

Prof. G. J. **Allman**, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

R. G. Wardlaw Ramsay, Esq., and Duckinfield Scott, Esq., were elected Fellows.

The President said:—"Before entering on the regular business of the Meeting, it becomes my melancholy duty to announce the death of Mr. Thomas Bell at the age of 87. Mr. Bell was the oldest Fellow of the Society, having been elected into it in the year 1815. He had held the Presidential Chair for many years; and under his judicious and able guidance the Society had marvellously advanced in prosperity. He was a distinguished zoologist, and by his researches had largely advanced our knowledge of the fauna of the British Isles. His labours have left their mark on the Zoology of Britain; and it is hard to say who can take his place in the department of Natural History in which he had shown himself so loving and conscientious an observer. He was known personally to many here present, and by reputation to all of us; and the Meeting will receive with sincere sorrow the sad announcement that he has his place no longer among our Fellows."

Mr. Thomas Christy exhibited a collection of dried flowers from Western Australia made by Mrs. Bunbury. She observes that the once common native plants are becoming scarce in the pasture-land of the Colony, and that it is now difficult to propagate them even by culture.

Mr. J. T. Carrington exhibited male and female specimens of the northern Stone-Crab (*Lithodes arctica*) which had lived in the Westminster Aquarium. The peculiar asymmetry of the abdominal segments of the female was adverted to; and from this and other reasons an affinity with the Hermit Crab (*Pagurus*) was pointed out.

The following papers were read:—

1. "On the Indigenous Timber, and on the Plants introduced into New Zealand." By H. M. Brewer, of Wanganui, New Zealand. Communicated by Dr. Murie, F.L.S.
2. "On a supposed Polymorphic Butterfly from India." By Prof. J. O. Westwood, F.L.S.

## April 1st, 1880.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

T. L. Bancroft, Esq., and G. T. Bettany, Esq., were elected Fellows.

Mr. J. R. Jackson exhibited the stems of *Arundo Donax* with a portion of the rhizome attached. Enormous quantities of these have recently been imported into this country from Algeria, and made up into parasol-handles, a firm of wholesale manufacturers having made a speciality of them for this season.

A series of specimens of Japanese Conifers was exhibited by Dr. Maxwell Masters. These Conifers had been collected by Mr. Maries; fifty or sixty species are said to be found in the Japanese and Chinese regions.

The following papers were read:—

1. "A new Genus (*Pyramocera*) of Moths of the Family Liparidæ from Madagascar." By A. G. Butler, F.L.S.

2. "Remarks on Mr. F. E. Harman's Report on the Coffee-leaf Disease." By J. Cameron, F.L.S., of Bangalore.
3. "Notice of Marine Crustaceans collected by Mr. P. Geddes at Vera Cruz." By Edward J. Miers, F.L.S.

### April 15th, 1880.

The Rev. GEORGE HENSLOW, F.L.S., in the Chair.

The Minutes of the last Meeting were read and signed.

Mr. Samuel H. Wintle was elected a Fellow.

Mr. Charles Stewart exhibited and made remarks upon an anomaly in an example of a species of Echinoderm, *Amblypneustes*.

There was likewise exhibited by Dr. James Murie a series of microscopic sections of Pearls, showing great variation in structural detail.

The following papers were read:—
1. "The Mollusca of the 'Challenger' Expedition."—Part V. By the Rev. R. Boog Watson, F.L.S.
2. "On new Aroideæ, with observations on other Known Forms."—Part I. By N. E. Brown, A.L.S.
3. "A Note on an Abnormal (Quadriradiate) Specimen of *Amblypneustes formosus*." By Prof. F. Jeffrey Bell. Communicated by Dr. Murie, F.L.S.

### May 6th, 1880.

H. T. STAINTON, Esq., F.R.S., in the Chair.

The Minutes of the last Meeting were read and signed.

M. C. J. de Maximowicz, Professor Metschnikoff, and Dr. Strasburger were elected Foreign Members.

The Chairman announced that Dr. Thomas Boycott had expressed his desire to withdraw as an Auditor of the Society, and that Mr. R. McLachlan had been recommended by the Council to take his place. The vote of the Fellows present was thereupon taken, and Mr. McLachlan duly elected.

Mr. Thomas Christy read a letter from a correspondent, Mr. Blacklaw, of St. Paulo, Brazil, in which it was mentioned that several attempts to rear the Liberian Coffee (*Coffea liberica*) in the district at different altitudes in different seasons and under different conditions, both under cover and in the open air, had all been unsuccessful.

3. "On the Vocabulary of Botanical Terms in use in the Description of Flowering-Plants." By G. T. Bettany, F.L.S.

4. "On the Tusks of the Fossil Walrus found in the Red Clay of Suffolk." By Prof. E. Ray Lankester, F.R.S., F.L.S.

5. "On an Irregular Species of *Amblypneustes*." By Charles Stewart, F.L.S.

## *Anniversary Meeting.*

### May 24th, 1880.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

The President, after a few introductory remarks of congratulation on the prospects of the Society generally, referred to the Obituary, pointing out that several of the oldest Members would now no longer appear on our List. The former and worthy President, Professor Bell, whose works on the British Fauna are classical, had died at the age of 87, and found a resting-place at Selborne. Mr. John Miers, another veteran of 91 years, had left a monument of industry and botanical research in the many memoirs enriching the Society's 'Transactions,' besides the monographs of the Menispermaceæ and Apocynaceæ, in themselves extensive. General Munro, a gallant officer and an excellent observer, had left a place difficult to be filled; for his accurate and wide knowledge of the Gramineæ was admitted by all, and he was constantly consulted on the group. Dr. David Moore, of Dublin, had left his mark in valuable researches on the Irish Flora. In Mr. Wilson Saunders the Society had had a worthy and valuable officer. Mr. E. W. Cooke, R.A., represented Art, bringing his fervent love of natural objects, especially Botany and Geology, to bear in his paintings with truthful effect. Mr. Thomas Atthey of Gosforth, Newcastle-upon-Tyne, had a more than local reputation as an enthusiastic and able naturalist, and, while studying several of the lower groups of animal and vegetable life, finally devoted himself to the branch of Palæontology. The Foreign Members, Prof. J. F. Brandt of St. Petersburg (zoologist), and the botanists Dr. Ed. Fenzl, of Vienna, and Prof. W. P. Schimper, of Strasburg, had each a world-wide reputation.

The President had to regret that, after a full term of service, the Secretaries and Treasurer had proposed to resign office; and this had been acceded to by the Council as a matter of form.

The senior Secretary then read his report as follows:—

Since the last Anniversary the Society had lost by death the following Members:—

### FELLOWS (10).

Morton Allport, Esq.*
Prof. Thomas Bell.*
E. W. Cooke, R.A.*
Rev. J. Lockwood.
John Miers, Esq.*
Dr. David Moore.*
General Munro.*
Dr. Llewellyn Powell.
W. Wilson Saunders, Esq.*
Andrew Swanzy, Esq.

### FOREIGN MEMBERS (3).

Prof. Johann Friedrich Brandt, of St. Petersburg.*
Dr. Eduard Fenzl, of Vienna.*
M. Guillaume Philippe Schimper, of Strasburg.*

### ASSOCIATE (1).

Thomas Atthey.*

And that three Fellows had withdrawn, viz.:—

Rev. John Constable.
J. Lawrence Hamilton, Esq.
Daniel Pigeon, Esq.

On the other hand, there had been an accession by election of twenty-eight Fellows, three Foreign Members, and four Associates.

The Library showed a marked increase and improvement by additions obtained by purchase, exchange, and donations, and had been amply used in biological reference and loan of books.

The scientific communications and exhibitions at the Meetings during the Session had kept pace with the march of science; and the attendance of the Fellows bore witness to the active interest taken in the proceedings generally.

The Treasurer (Dr. J. Gwyn Jeffreys) then proceeded to read his Report. [For Statement see opposite.]

"In resigning the Treasurership of the Society, which I have had the honour of holding for the last five years, I take the opportunity of congratulating the Society on its increased and increasing prosperity in a financial point of view. Notwithstanding the late depression of commerce, which has to a greater or less extent injuriously affected other scientific Societies, as well as the additional yearly expenditure consequent on the removal to Burlington House, and the greater amount of Salaries paid, our publications have not been restricted, and we have spent more on the Library than was formerly the case—two important matters.

"We are quite free from debt; we have an invested capital of £3730 12*s.* 8*d.*, and the Balance at our Bankers and on hand at this date is £522 18*s.* 2*d.* Twelve months ago, owing to the unfortunate and long illness of the Librarian, Mr. Kippist, his

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* For reference to notices, see Index.

## *Receipts and Payments of the Linnean Society from May* 1, 1879, *to April* 30, 1880.

| | £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|
| Balance from the previous year 1878–1879 | | | | 207 | 15 | 10 |
| „ of Petty Cash from ditto | | | | 42 | 17 | 4 |
| Interest on Invested Funds | £119 | 9 | 6 | | | |
| Admission Fees | 174 | 0 | 0 | | | |
| Compositions | 252 | 0 | 0 | | | |
| Annual Contributions of £2 0 0 | 6 | 6 | 0 | | | |
| Ditto ditto of 3 0 0— | | | | | | |
| for prior years | 51 | 0 | 0 | | | |
| for present year | 891 | 6 | 0 | | | |
| Sales of Society's Publications:— | | | | | | |
| Transactions | 217 | 10 | 7 | | | |
| Journals | 67 | 8 | 10 | | | |
| Library Catalogue | 0 | 12 | 0 | | | |
| Donations towards Plates | 35 | 0 | 0 | | | |
| | | | | 1814 | 12 | 11 |
| | | | | £2065 | 6 | 1 |

| | £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|
| Taxes and Insurance | | | | 14 | 8 | 9 |
| Repairs and Furniture | | | | 12 | 17 | 6 |
| Coals and Gas | | | | 58 | 9 | 7 |
| Salaries and Commission | | | | 458 | 4 | 6 |
| Petty Expenses (including Tea and Postage) | | | | 59 | 18 | 8 |
| Books purchased | | | | 112 | 6 | 0 |
| Bookbinding and Stationery | | | | 35 | 13 | 5 |
| Expenses of Society's Publications:— | | | | | | |
| Printing | £521 | 13 | 10 | | | |
| Plates | 193 | 14 | 3 | | | |
| | | | | 715 | 8 | 1 |
| Miscellaneous Printing | | | | 41 | 17 | 5 |
| Investment | | | | 125 | 0 | 0 |
| | | | | £1634 | 3 | 11 |
| Balance in the hands of the Bankers | | | | 431 | 2 | 2 |
| | | | | £2065 | 6 | 1 |

J. GWYN JEFFREYS, *Treasurer*.

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The foregoing Accounts have been examined and the Balance found to be correctly stated at £431 2*s*. 2*d*.

May 8, 1880.

CHARLES J. BREESE,
F. D. GODMAN,
R. McLACHLAN,
H. T. STAINTON. } *Auditors.*

accounts became confused, and the Assistant Secretary, Dr. Murie, has since, at my request, undertaken the receipts and payments in accordance with the 1st Bye-Law in Chapter X. A special Committee was also appointed by the Council for investigating the financial position of the Society; and their valuable suggestions have been adopted, especially as to the reasonable limitation of the publication expenses, which had increased from £796 14*s*. 0*d*. in 1876 to £1100 5*s*. 1*d*. in 1879. With respect to the Compositions, which, even if they were altogether invested, must seriously diminish the income of the Society, I may remark that during the five years of my Office I have received £1968 and invested £920 15*s*. 0*d*. During the previous five years no part of the compositions appear to have been invested. I have also received and invested £840 for legacies. Our Capital has been doubled; it was in 1875 £1860, and is now £3730 12*s*. 8*d*. The annual contributions received in 1876 amounted to £694 13*s*., and last year to £948 12*s*.

"I cannot close this short Report without expressing my entire satisfaction with the services of our Assistant Secretary, Dr. Murie, who has so ably and indefatigably edited the publications of the Society, as well as assisted me in my financial duties; and I would mention with much approval Mr. James West, who is not only the Clerk, but also the Acting Librarian of the Society."

A special vote of thanks to the Treasurer was proposed by Mr. W. Carruthers and seconded by Sir J. D. Hooker.

The Ballot for the Council having been closed, the President nominated Mr. T. Christy, Dr. J. Millar, and Mr. H. T. Stainton Scrutineers. The votes having been examined and counted, and reported to the President, he declared the result to be as follows:—

For removal from the Council:

J. Ball, F.R.S., W. Carruthers, F.R.S., F. DuCane Godman, Esq., Dr. A. Günther, F.R.S., and the Rev. George Henslow.

For election into the Council:

E. R. Alston, Esq., G. Bentham, F.R.S., G. Busk, F.R.S., Dr. M. Foster, and B. D. Jackson, Esq.

The Ballot for the Officers having also closed, the President nominated the same Scrutineers. The votes having been examined and counted and reported to the President, he declared the result to be as follows:—*President*, Prof. G. J. Allman; *Treasurer*, Frederick Currey, Esq.; *Secretaries*, B. Daydon Jackson, Esq., and Edward R. Alston, Esq.

The President having delivered his Address, "On the Vegetation of the Riviera, a chapter in the Physiognomy and Distribution of Plants," a vote of thanks was given for his excellent

Address, with a request that he should allow it to be printed. [It will be found in the Journal, Botany (No. 108), vol. xvii. p. 135.]

June 3rd, 1880.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

The following papers were read:—

1. "On the Specific Identity of *Scomber punctatus*, Couch, with *S. scomber*, Linn." By Dr. F. Day, F.L.S.

2. "Note on the Anal Respiration in the Zoëa-Larva of the Decapods." By Marcus M. Hartog, F.L.S.

3. "On the Application of the Results of Pringsheim's recent Researches on Chlorophyll to the Life of the Lichen." By George Murray, F.L.S.

4. "On the Genus *Solanocrinus*, Goldfuss, and its relation to Recent *Comatulæ*." By P. Herbert Carpenter, M.A. Communicated by Dr. W. Carpenter, C.B., F.L.S.

June 17th, 1880.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

The Rev. H. G. Bonavia Hunt, Henry Nottidge Moseley, M.A., Rev. A. Merle Norman, and E. A. Webb, Esq., were elected Fellows.

Dr. R. C. A. Prior read a letter from a correspondent recounting the occurrence of the rare instance of a Mistletoe Parasite on a Mistletoe.

Lord Lilford exhibited a series of Skins and Skulls of the Wild Sheep of Cyprus (*Ovis ophion*, Blyth).

Mr. E. M. Holmes showed, under the microscope, an example of *Polysiphonia fastigiata* with development of Antheridia and Cystocarp on the same branch, which had been obtained at Ventnor, Isle of Wight.

Mr. F. Crisp exhibited several preparations of the early stages of Invertebrates from the Aquarium at Naples; he also exhibited living specimens of the new Freshwater *Medusa* from the Botanic Gardens, Regent's Park.

Mr. C. Stewart showed, under the microscope, sections of the growing-points of *Chara* and of the Common Ash.

The following papers were read:—

1. "On certain Glands in the Maxillæ of Spiders." By F. M. Campbell, F.L.S.

2. "On two Cases of Incorporation by Sponges of Spicules foreign to them." By Stuart O. Ridley, F.L.S.

3. "On *Limnocodium Victoria*, a new Hydroid Medusa of Fresh Water." By Prof. G. J. Allman, Pres. L.S.

4. "On a Stridulating-Organ in *Linyphia terricola* and *Steatoda guttata*." By F. M. Campbell, F.L.S.

5. "Note on *Aplysia dactylomela*." By Dr. G. E. Dobson, F.L.S.

6. "On the Polyzoa collected in the North-Polar Expedition." By George Busk, F.R.S., F.L.S.

7. "On the Natural Classification of the Gasteropoda." By Dr. J. D. Macdonald, F.R.S. Communicated by Dr. Dobson, F.L.S.

8. "Mollusca of the 'Challenger' Expedition.—Part VI. The Genus *Turritella*." By the Rev. R. Boog Watson, F.L.S.

9. "Observations on Ants, Bees, and Wasps."—Part VII. By Sir John Lubbock, Bart., F.L.S.

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# NOTICES.

The Proceedings of the Linnean Society have been resumed in compliance with a very generally expressed wish on the part of the Fellows that an official record of the business done at each Meeting should be available. The present issue contains the Proceedings for the five Sessions from November 1875 to June 1880. The Obituary Notices have been omitted, none having been prepared for publication by the late Secretary during those years; but in the Index references have been supplied where practicable to outside sources of information.

The Proceedings of the last two Sessions, with the President's Address delivered 24th May, 1882, will be issued in the autumn.

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Volume I. of the Proceedings, containing short papers, abstracts of others, Anniversary Meetings, and Obituary Notices, between November 1838 and June 1848, was issued in 37 Numbers at intervals, and completed with Index and Contents in 1849.

Vol. II., from November 1848 to June 1855, with similar contents, in like manner was issued in 29 Numbers at intervals, and completed with Index in 1855.

From November 1855 till Session 1871–1872 the Proceedings of each Session complete in itself with Index was separately issued, and paged and numbered accordingly without distinction of volume —the same being inserted in the Journals, and so distributed.

During the three subsequent years, viz. Sessions 1872–73, 1873–74, 1874–75, the Proceedings were issued separate from the Journals, and sent out annually.

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**The LIBRARY and READING-ROOM will be closed** from Saturday, August 5th, till Saturday, September 2nd, inclusive.

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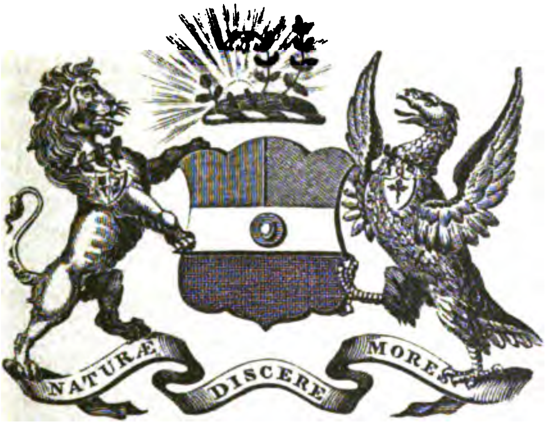
Fellows are requested to send in notice of any change of Address, that the same may be entered in the new List of Fellows to be issued in October.

**MARCH 1883.]** **[Price 3s.**

# PROCEEDINGS

OF THE

# LINNEAN SOCIETY OF LONDON.



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**FROM NOVEMBER 1880 TO JUNE 1882.**

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# PROCEEDINGS

OF THE

# LINNEAN SOCIETY OF LONDON.

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## (SESSION 1880–81.)

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November 4th, 1880.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

Edward Brown, Esq., H. E. Dresser, Esq., and T. F. Peppé, Esq., were elected Fellows.

Mr. H. C. Sorby brought under notice drawings of British Anemones found by him attached to the upper fronds of seaweeds in deep water; and he mentioned the occurrence of a cream-coloured Cetacean on our coast, species undetermined.

Mr. Arthur Bennett drew attention to a new British *Chara* (*C. stelligera*), remarkable for the presence of stellate bulbils on the stems.

Mr. E. M. Holmes exhibited microscopical slides of two Marine Algæ new to Britain—*Dasya Gibbesii*, Harv., from Berwick-on-Tweed, and *Ectocarpus terminalis*, Kütz., from Weymouth; also examples of *Callithamnion roseum* and *C. spongiosum* with antheridia and trichophora on the same branchlet; also of *Helminthora divaricata* with zonate tetraspores, which have not hitherto been observed.

Dr. R. C. A. Prior showed, and made remarks on, specimens of Flybane (*Amanita Muscaria*) from Chipstable, West Somerset

Dr. T. Spencer Cobbold exhibited a remarkable Trematode from the Horse (*Gastrodiscus Sonsinonis*), discovered by Dr. Sonsino at Zagazig in Egypt.

Mr. G. F. Angas exhibited a Leaf of *Hermas gigantea*, an Umbelliferous plant of the Cape. The fibro-vascular system had been entirely removed, leaving the epidermis and subcutaneous tissue only; it is used as tinder by the Hottentots.

Mr. E. A. Webb exhibited the proliferous inflorescence of *Rubus fruticosus*, L., in which the flowers were represented by elongated axes densely covered with minute bracts, the apical portions of which were fasciated.

The following papers were read:—

1. "Additions to our Knowledge of the Flora of North-Western India." By Prof. George Watt, M.B., F.L.S.
2. "On the Papilionidæ of South Australia." By J. G. Otto Tepper, F.L.S.
3. "Notes on a Collection of Flowering-Plants collected by Mr. L. Kitching in Madagascar." By J. G. Baker, F.R.S., F.L.S.

### November 18th, 1880.

ROBERT M^cLACHLAN, F.R.S., in the Chair.

The Minutes of the last Meeting were read and signed.

Lieut.-Col. H. H. Godwin-Austen was elected a Fellow.

Dr. G. E. Dobson exhibited, under the microscope, a remarkable parasitic Worm taken by him from the intestinal canal of a Bat (*Megaderma frons*) from the Gold Coast. It was evidently allied to *Pterygodermatites plagiostoma*, Wedl, from the intestine of the Long-eared Hedgehog (*Erinaceus auritus*); though on first examination he (Dr. Dobson) had been disposed to regard it as a new genus, *Metabdella*.

Dr. Cobbold exhibited five specimens of *Distoma crassum*, Busk. He stated that the Chinese Missionary whose parasites had been brought before the Society in 1875 had, on his return to China, again become the victim of these large flukes; and his wife and daughter were also attacked, and all of them been compelled to return to England.

The following papers were then read and discussed:—

1. "The Classification of Gasteropoda."—Part II. By Dr. J. Denis Macdonald, F.R.S. Communicated by Dr. G. E. Dobson, F.L.S.
2. "Note on a Proliferous Condition of *Verbascum nigrum*." By the Rev. G. Henslow, F.L.S.
3. "Novitates Capenses." By P. M^cOwan and Harry Bolus, F.L.S.
4. "Australian Fungi."—Part II. By the Rev. M. J. Berkeley, F.R.S., F.L.S.

## December 2nd, 1880.

Prof. G. J. **Allman**, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

F. Arthur Canton, Esq., Charles B. Cory, Esq., Charles Fawcett, Esq., H. O. Huskisson, Esq., Peter Inchbald, Esq., Charles L. Jackson, Esq., Paul H. M<sup>c</sup>Gillivray, Esq., R. W. Emerson M<sup>c</sup>Ivor, Esq., and Ernest L. Sellon, Esq., were elected Fellows.

The Resolutions of Council of November 25th, 1880, relative to proposed alterations of Bye-Laws (to be balloted for at the Evening General Meeting, January 20th, 1881), were read for the first time as follows:—

Section 2 of Chapter VIII. of the Bye-Laws shall be repealed, and the following substituted:—

"The Council for the time being shall annually, at their First Meeting in April, cause to be prepared two Balloting-Lists, one of which (No. 1) is to contain the names of Five Fellows whom they shall recommend to be removed from the Council, and also the names of Six other Fellows out of whom the Council recommend that the Five persons to be elected into the Council shall be chosen; and the other list (No. 2) is to contain the names of such Fellows as they shall recommend to fill the Offices of President, Treasurer, and Secretaries for the year ensuing, which Lists shall be read at the Second General Meeting in April in every year, and then fixed up in the Meeting-room and Library of the Society for the space of fourteen days at least. And if any one Fellow, or more than one Fellow, shall desire to substitute the name or names of any other person or persons in the place of any name or names contained in the said Lists either for removal from or for election into the Council, or for filling the respective offices of President, Treasurer, or Secretary, such one Fellow, or more than one Fellow, shall leave notice in writing at the House of the Society of the name or names they propose to be substituted within seven days after the said Lists shall have been read. Balloting-Lists shall, after the expiration of the said seven days, be printed according to the forms (Nos. 1 and 2) in the Schedule, in case no notice shall be previously left as aforesaid; but in case of any such notice or notices being so left, then the name or names of the person or persons proposed to be substituted shall be added to the Lists respectively proposed by the Council according to the forms (Nos. 3 and 4) in the Schedule. And such Lists shall be transmitted to each Fellow whose known residence shall be within the United Kingdom at least one week before the Annual General Meeting shall take place."

Section 4 of the same Chapter shall be repealed and the following substituted:—

"Each voter, before he delivers his List or Lists, shall strike out the name or names of those persons recommended for whom he does not vote; and if more names shall be suffered to remain in any List than the number of persons to be elected or removed, such List shall be rejected; and in case the names suffered to remain shall be less than the number of vacancies to be supplied, those names only which shall remain in the List shall stand as voted for."

In Section 8 the following words shall be omitted:—"should contain more than the proper number of names, or if any List."

In Chapter XII. Section 1 the following words shall be omitted:—"provided that the position of the present Librarian elected by the Society be not thereby affected."

In Chapter XIII. Section 5, after the words "shall be immediately read and" the following words shall be added, "if approved by the Fellows present."

In Chapter XIV. Section 5, after the words "Vice-President" shall be inserted "or Chairman;" and after the word "Society" shall be added "and the terms of any such Resolution shall also be forthwith communicated by circular to each Fellow having a known address in the United Kingdom."

Mr. George Brook exhibited, under the microscope, specimens of *Noctiluca miliaris* preserved in a weak solution of osmic acid. The specimens had been obtained at the Mouth of the Thames.

Mr. Thomas Christy laid on the table a series of Fungi transmitted by Dr. Bancroft, of Brisbane, Queensland. He also showed some fruits of a species of *Capsicum* from Southern Europe, distinguished by their short ovate shape and their total absence of pungency.

The Rev. George Henslow showed diagrams of the structure of a malformed example of *Verbascum nigrum*, which formed the subject of a paper read at the previous Meeting.

Prof. T Spencer Cobbold exhibited a specimen of a rare Chinese Fluke (*Distoma sinense*), showing the internal organs, especially the vitellary sacs and other reproductive parts, ova, &c.

The following papers were read:—

1. "Notes on British Tunicata (1. *Ascidiida*)." By W. A. Herdman, D.Sc. Communicated by Prof. C. Wyville Thomson, F.L.S.
2. "On an *Erythræa* new to England." By Frederick Townsend, F.L.S.
3. "On the Conifers of Japan." By Dr. Maxwell T. Masters, F.L.S.
4. "Mollusca of the 'Challenger' Expedition."—Part VII. By the Rev. R. Boog Watson, F.L.S.

The President afterwards announced that the next General Meeting of the Fellows of the Society to be held Thursday, December 16, at 8 P.M., would be made a Special Meeting for the election of a Member of Council.

## December 16th, 1880.

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and signed.

H. A. Erlebach, Esq., W. A. Herdman, D.Sc., and Thomas F. Inman, Esq., were elected Fellows.

The President then declared the Meeting Special (according to the Charter and Bye-Laws) for the purpose of electing a Councillor in the room of Mr. G. Bentham retired.

The President further appointed Dr. R. C. A. Prior, Mr. H. C. Sorby, and Mr. H. T. Stainton, Scrutineers; and announced that the Ballot-Box would be kept open until 9 o'clock.

The Resolutions of Council of November 25th, 1880, relative to proposed alterations of Bye-Laws (to be balloted for at the Evening General Meeting, January 20th, 1881), were read for the second time.

Dr. Thomas Boycott exhibited a series of microscopical specimens and sections illustrative of the growth of the fruit of the Orange.

Dr. Maxwell Masters afterwards exhibited an example of the so-called "Kohl Rabi," in which development of side-shoots took place in consequence of injury to the terminal bud.

Dried Syrian Figs were shown by Mr. Percival de Castro, and inquiry made of the Fellows as to their species or other information, it being intended to introduce their cultivation into the South of France; but authentic published data concerning this very excellent variety were scanty.

The following papers were read:—

1. "The Theory of the Growth of Cuttings; illustrated by Observations on the Bramble (*Rubus fruticosus*)." By Francis Darwin, F.L.S.
2. "On the Means by which Leaves place themselves at Right Angles to the Direction of Incident Light." By the same.
3. "On the Land-Molluscan Genus *Durgella*, Blanf., with Notes on its Anatomy and Description of a new Species." By Lieut.-Col. H. H. Godwin-Austen, F.R.S., F.L.S.

The Ballot having closed, the Scrutineers reported that Mr. Charles Baron Clarke had been duly elected a Member of Council.

## January 20th, 1881.

The Rev. J. M. Crombie, M.A., in the Chair.

The Minutes of the last Meeting were read and signed.

The Resolutions of Council of November 25th, 1880, relative to proposed alterations of the Bye-Laws, which had been read at the General Meetings of the 2nd and 16th December 1880 respectively, were again read paragraph by paragraph, and successively voted for by Ballot and confirmed by the Fellows of the Society present, excepting the alterations and amendments in Section 2 of Chapter VIII., which were not confirmed.

There were exhibited for the Rev. J. Gould three portfolios of

British Sea-weeds and Zoophytes, prepared by Mr. F. W. Smith, of Falmouth.

A Squirrel's nest from a Holly-bush was exhibited by Mr. Charles Berjeau; and in his remarks he mentioned he could find no example of this Rodent's arboreal domicile either in the British Museum or other London collections.

Mr. Wm. Hillhouse explained the construction and advantages of a new form of Cabinet for microscopical objects designed by him.

Mr. Thomas Christy exhibited specimens of horn-shaped Galls growing on a branch of *Pistacia atlantica*. These were somewhat similar in appearance to those known in India under the name of "Kalera-singhi" galls; and from them a substance exuded resembling Chian turpentine.

The following papers were read:—

1. "Notes on Orchideæ." By George Bentham, F.R.S., FL.S.

2. "On some British Hybrid Ferns." By Edward Joseph Lowe, F.L.S.

3. "A Revision of the Genus *Vibrissea*." By William Phillips, F.L.S.

### February 3rd, 1881.

Robert McLachlan, F.R.S., in the Chair.

The Minutes of the last Meeting were read and confirmed.

Lieut.-Col. A. A. Davidson was elected a Fellow.

A Note from Mr. A. Craig Christie was read on the occurrence of Stipules in the natural order Ilicineæ. In several authorities it is stated that that order had exstipulate leaves; but specimens of *Ilex Aquifolium* were shown wherein what appeared to be deciduous stipules were present.

Mr. George Murray exhibited a Japanese Book containing wood-sections; and, in contrast, he drew attention to a German work of a similar kind.

Dried specimens of a Worm and of a Mussel, in which the soft tissues were preserved by a new method adopted by Prof. C. Semper, were exhibited on behalf of Herr L. Würth, of Wurzburg.

The following papers were read:—

in a Letter to, and communicated by, John Cameron, F.L.S., of Bangalore.

4. "Coffee-Disease in South America." By Dr. M. C. Cooke, A.L.S.

## February 17th, 1881.

**Frank Crisp**, Esq., LL.B., in the Chair.

The Minutes of the last Meeting were read and confirmed.

Mr. W. Wickham exhibited and made the following remarks on two Collections of Plants from the Arctic Regions:—Of the 57 species of Phanerogams collected by Capt. A. H. Markham whilst in the "Isbjorn" in Novaya Zemlya in 1879, 37 of the most interesting of these were placed before the Fellows of the Society for inspection. The absence of any species of Gentian is remarkable, as it is so characteristic of the European highlands, and, moreover, as Arctic Russia (to which Novaya Zemlya is in close proximity, and from which it most probably derived its plants) contains 6 species of Gentian. Another interesting feature of the collection is the presence of three species of Leguminosæ found in abundance and of vigorous growth. The order is unrepresented in Spitzbergen and Arctic Greenland. Of *Polemonium cæruleum* and its "very arctic" variety or subspecies *P. humile*, it is asked, whence came the variety? Did causes forming it operate only in part, or were there two sources whence Novaya Zemlya was stocked?

The second collection of typically Polar plants exhibited were those from the coast of Franz-Josef Land, obtained by Mr. Leigh Smith in his successful voyage thither in 1880. Some 61 species of flowering-plants were collected; but from the account given of the country visited, it is very probable a more ample Flora yet awaits investigation.

Mr. A. Hammond exhibited, under the microscope, with a drawing, a portion of the wall of the so-called glandular sac of the larva of the Puss-Moth (*Cerura vinula*), from which that insect is said to eject an acid liquid when alarmed or irritated. He stated that although there could be no doubt that the organ was the source of the excretion in question, there nevertheless was some difficulty in regarding it as a true glandular structure, from the large quantity of chitinous matter constituting the wall of the sac itself.

The following papers were read:—

1. "Observations on some British Fishes." By Dr. Francis Day, F.L.S.

2. "On Right-hand and Left-hand Contortion of the Corolla." By Charles Baron Clarke, F.L.S.

3. "On *Leirodermatium affine* and a Form of *Aphrocallistes* from Deep Water." By Prof. P. M. Duncan, F.R S., F.L.S.

## March 3rd, 1881.

ROBERT MᶜLACHLAN, F.R.S., in the Chair.

The Minutes of the last Meeting were read and confirmed.

Arthur Bennett, Esq., W. Bancroft Espeut, Esq., G. Johnson Fookes, Esq., N. Henry Martin, Esq., Prof. L. Compton Miall, Henry N. Ridley, Esq., Sir Arthur Scott, Bart., and Walter G. Woollcombe, Esq., were elected Fellows.

Mr. R. Irwin Lynch was elected an Associate.

Mr. E. M. Holmes exhibited specimens of *Nitophyllum reptans*, Crouan, a Marine Alga new to Britain, and *Dermocarpa prasina*, Born., parasitical on *Catanella Opuntia* from Scotland, and collected by Mr. G. M. Traill, of Edinburgh; also a new British Moss, *Loscuræa saxicola*, Milde, gathered on Ben Lawers by Mr. W. West, of Bradford.

Mr. Thomas Christy showed an example of the dried juice of the Papaw-tree (*Carica Papaya*), and of the active principle Papayine derived from it, mentioning the peculiar physiological properties of the juice and the proposed use of the active principle in Medicine.

The following papers were read:—

1. "On the Reparative Processes which occur in Vegetable Tissues." By Samuel G. Shattock. Communicated by Prof. M. Foster.
2. "On the Apparent Retention of a Sur-anal Plate by a Young *Echinometra*." By Prof. F. Jeffrey Bell. Communicated by Dr. J. Murie.
3. "On Dimorphism in *Arnebia* and *Macrotomia*." By C. B. Clarke, F.L.S.
4. "Mollusca of the 'Challenger' Expedition."—Part. VIII. Family Pleurotomidæ. By the Rev. R. Boog Watson, F.L.S.

## March 17th, 1881.

FRANK CRISP, LL.B., in the Chair.

The Minutes of the last Meeting were read and confirmed.

Joseph Armitage, Esq., and Prof. Thomas W. Bridge were elected Fellows.

Mr. Frederick Moore was elected an Associate.

The Chairman, in adverting to the great loss sustained by the Society in the death of Mr. E. R. Alston, the late Zoological Secretary, communicated to the Meeting the Council's Resolutions as follows:—

**"That the Council have heard with great regret of the death of Mr. Alston, and desire to place upon record their sense of the loss which the**

Society has sustained by being deprived of his services as Zoological Secretary." "And that a copy of the above be forwarded to the family with the expression of the Council's sympathy." Further, "That the Council propose to the Meeting, as a mark of respect to the memory of the late Mr. Alston, Zoological Secretary of the Society, that nothing but formal business be taken at this Evening's Meeting."

These Resolutions of the Council were thereupon adopted in silence.

Prof. Martin Duncan thereafter moved, on the part of the Fellows of the Society, a vote of condolence with the family of the late Mr. Alston; and the same to be forwarded with an expression of their sympathy.

This Motion having been seconded by Mr. Howard Saunders, was carried unanimously.

With reference to certain proposed alterations in the Bye-Laws of the Society, the Chairman then read the Resolutions of Council, March 17th, 1881, as follows:—

That the first paragraph as amended (*infra*) be read from the Chair this evening (17th March) with a view of being put to the Society for acceptance; and that it be stated from the Chair that, in the event of the rejection of the proposed alterations, that Chapter VIII. Sections 4 and 8 be restored.

(To be offered for confirmation at the Meeting to be held on 21st April, 1881.)

Section 2 of Chapter VIII. of the Bye-Laws shall be repealed, and the following substituted:—

"The Council for the time being shall annually, at their first Meeting in April, cause to be prepared two Balloting-Lists, one of which (No. 1) is to contain the names of Five Fellows whom they shall recommend to be removed from the Council, and also the names of Five Fellows whom the Council recommend to be elected into the Council; and the other List (No. 2) is to contain the names of such Fellows as they shall recommend to fill the offices of President, Treasurer, and Secretaries for the year ensuing; which Lists shall be read at the Second General Meeting in April in every year, and then fixed up in the Meeting-Room and Library of the Society for the space of fourteen days at least. And if any one Fellow, or more than one Fellow, shall desire to substitute the name or names of any other person or persons in the place of any name or names contained in the said Lists, either for removal from or for election into the Council, or for filling the respective offices of President, Treasurer, or Secretary, such one Fellow, or more than one Fellow, shall leave notice in writing at the House of the Society of the name or names which he or they may propose to be substituted within seven days after the said Lists shall have been read. Balloting-Lists shall, after the expiration of the said seven days, be printed according to the forms (Nos. 1 and 2) in the Schedule to the existing Bye-Laws, in case no notice shall have been previously left as aforesaid; but in case of any such notice or notices being so left, then the name or names of the person or persons proposed to be substituted shall be added to the Lists respectively proposed by the Council; and the Lists as proposed by the Council or altered (as the case may be) shall be communicated by circular to each Fellow whose known residence shall be within the United Kingdom at least one week before the Annual General Meeting shall take place."

### *Alternative Alterations.*

That Sections 4 and 8 of Chapter VIII. shall be repealed and the following substituted :—

SECTION 4. "Balloting-Lists shall be delivered to every Fellow who shall apply for them ; and if any Fellow should not approve of the persons therein named, but be desirous of giving his vote for some other person or persons, he will strike his pen or pencil across the printed name or names of the person or persons of whom he may disapprove, and will write over against such printed name or names, on the blank side left and prepared for the purpose, the name or names of the other person or persons for whom he may be desirous to give his vote."

SECTION 8. "If any List should contain more than the proper number of names, or if any List of Officers should include the name of any person not being a Member of the Council, such List shall be set aside, and not taken any account of by the Scrutineers in casting up the number of Votes."

### April 7th, 1881.

GEORGE BUSK, Esq., F.R.S., in the Chair.

The Minutes of the last Meeting were read and confirmed.

William Fawcett, Esq., Robert Scott, Esq., Arthur Walker, Esq., and Dr. Andrew Wilson were elected Fellows.

The proposed alterations of the Bye-Laws and alternative alterations according to the Resolutions of Council of March 17th, 1881, were read for the second time from the Chair.

Mr. E. Morell Holmes exhibited specimens of three British Lichens (*Lecanora albolutescens*, *Lecidea rhagadiza*, and *Pertusaria spilomanthodes*) recently collected in Cumberland by the Rev. M. Johnson. He also drew attention to a series of articles, including the vegetable products, illustrative of the native manufactures of Madagascar, obtained by the Rev. Mr. Peake.

Dr. Garston, on behalf of Prof. Flower, exhibited a pair of Elephant's Tusks from the College of Surgeons' Museum which were surface-worn and encrusted with parasitic ova.

A series of Bots and other Entozoa, illustrative of Prof. Cobbold's paper on the Parasites of Elephants, were shown during the reading of the memoir in question.

The following papers were read :—

1. "On the Parasites of Elephants." By Prof. T. Spencer Cobbold, F.R.S., F.L.S.
2. "Monograph of the Indian Species of *Primula*." By George Watt, M.B., F.L.S.
3. "On the Green Colouring of the Hair of Sloths." By Dr. H. C. Sorby, F.R.S., F.L.S.

## April 21st, 1881.

W. Sweetland Dallas, F.L.S., in the Chair.

The Minutes of the last Meeting were read and confirmed.

Dr. Charles Barnard, James Bisset, Esq., William Holmes, Esq., Dr. Peter W. Marriott, John Charles Sawer, Esq., and S. Stubbs, Esq., were elected Fellows.

The Chairman then called the attention of the Fellows present to the Resolutions of the Council of March 17th, 1881, respecting the further proposed alterations of Bye-Laws. He explained that the Fellows themselves having on the 20th January last (1881) repealed and substituted Section 4 of Chapter VIII., and confirmed other alterations in Chapters VIII., XII., XIII., and XIV., while rejecting the proposed repeal of Section 2, Chapter VIII., and a substitution of a new Bye-Law, had unintentionally interfered with their own powers of voting.

To remedy this defect the Council had revised the new Bye-Law in question, expunging supposed objectionable clauses; and the same having been duly announced and successively read from the Chair at the Meetings of the 17th March and 7th April, it would now again be read and balloted for in due form.

The Council being solely actuated by the desire to have the Bye-Laws in conformity with the wishes of the majority of the Fellows, suggested a return to the original Bye-Laws Sections 4 and 8 of Chapter VIII., in the event of the revised substitution Section 2 Chapter VIII. being rejected.

The Chairman then announced, as the proposal of the Council, that Section 2 of Chapter VIII. of the Bye-Laws shall be repealed and the following substituted:—

"The Council for the time being shall annually, at their First Meeting in April, cause to be prepared two Balloting-Lists, one of which (No. 1) is to contain the names of Five Fellows whom they shall recommend to be removed from the Council, and also the names of Five Fellows whom the Council recommend to be elected into the Council; and the other List (No. 2) is to contain the names of such Fellows as they shall recommend to fill the offices of President, Treasurer, and Secretaries for the year ensuing; which Lists shall be read at the Second General Meeting in April in every year, and then fixed up in the Meeting-Room and Library of the Society for the space of fourteen days at least. And if any one Fellow, or more than one Fellow, shall desire to substitute the name or names of any other person or persons in the place of any name or names contained in the said Lists, either for removal from or for election into the Council, or for filling the respective offices of President, Treasurer, or Secretary, such one Fellow, or more than one Fellow, shall leave notice in writing at the House of the Society of the name or names which he or they may propose to be substituted within seven days after the said Lists shall have been read. Balloting-Lists shall, after the expiration of the said seven days, be printed according to the forms (Nos. 1 and 2) in the Schedule to the existing Bye-Laws, in case no notice shall have been previously left as aforesaid; but in case of any such notice or notices being so left, then the name or names of the person or persons proposed to be substituted shall be added to the Lists respectively proposed by the Council and the Lists as proposed by the Council or altered (as the case may be) shall be communicated by circular to each Fellow whose known residence shall be within the United Kingdom at least one week before the Annual General Meeting shall take place."

The Ballot having been taken, the above proposed alteration was negatived by a majority of the Fellows present.

Thereafter the Chairman read out the alternative alterations:—"That Sections 4 and 8 of Chapter VIII. shall be repealed and the following substituted:"—

SECTION 4. "Balloting-Lists shall be delivered to every Fellow who shall apply for them. And if any Fellow should not approve of the persons therein named, but be desirous of giving his vote for some other person or persons, he will strike his pen or pencil across the printed name or names of the person or persons of whom he may disapprove, and will write over against such printed name or names, on the blank side left and prepared for the purpose, the name or names of the other person or persons for whom he may be desirous to give his vote."

SECTION 8. "If any List should contain more than the proper number of names, or if any List of Officers should include the name of any person not being a Member of the Council, such List shall be set aside, and not taken any account of by the Scrutineers in casting up the number of votes."

These Motions having been balloted for in due form, were confirmed.

The following papers were read:—

1. "On Individual Variation in the Branchial Sac of Simple Ascidians." By W. A. Herdman, D.Sc., F.L.S.
2. "Note on *Hibiscus palustris*, Linn., and certain Allied Species." By B. Daydon Jackson, Sec. L.S.
3. "On the Freshwater Shells of Australia." By Edgar A. Smith. Communicated by Dr. J. Murie, F.L.S.
4. "On the Occurrence of the Norwegian *Argentina silus* on the Shore of the Moray Firth, Banffshire." By Thomas Edward, A.L.S.
5. "Mollusca of the 'Challenger' Expedition."—Part IX. Pleurotomidæ. By the Rev. R. Boog Watson, F.L.S.

## May 5th, 1881.

ARTHUR GROTE, Esq., Vice-President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

For the Council:—Mr. Frank Crisp and Mr. W. S. Dallas:—

Which, having been put to the vote, were unanimously agreed to by the Fellows present.

The Secretary exhibited, for Dr. Maxwell Masters, a branch of a Japanese Birch grown in England to show the beauty of the bark; and there was also shown a gnaur from the trunk of a Cedar of Lebanon.

Mr. Charles Stewart exhibited an ovum of *Helix hæmastoma*, remarkable for its great size relatively to that of the animal. He also showed the Generative Organs, peculiar in having the retractor muscle of the penis attached to the extremity of a short and larger spermatophoral gland; the prostatic portion of the common duct was exceedingly large, the uterine being devoid of the pouched character found in *Helix aspera*.

Mr. Thomas Christy made some remarks on a new India-Rubber tree from West Africa; and Mr. Holmes also showed a species of *Strychnos* from the same region.

The following papers were read:—

1. "Synopsis of the Indian Species of *Androsace*." By George Watt, M.B., F.L.S.

2. "Descriptive Catalogue of the Species of *Cellopora* collected by the 'Challenger' Expedition." By George Busk, F.R.S., F.L.S.

## May 24th, 1881.

### *Anniversary Meeting.*

Prof. G. J. Allman, M.D., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

The Treasurer (Mr. Frederick Currey) then read his Annual Report, stating that financially the Society had continued prosperous.

The Senior Secretary then read his Report; showing that since the last Anniversary eleven Fellows had died, viz.:—

Fellows (11).

C. J. H. Allen, Esq.
E. R. Alston, Esq.
John Blackwall, F.R.S.
H. Ramsay Cox, Esq.*
John Gould, F.R.S.
Gerard Krefft.
Dr. J. Lauder Lindsay.
A. Reginald Pryor.
Dr. J. D. Moore.
Dr. George Suche.
Arthur Veitch, Esq.†

* See 'The Entomologist' (1880), vol. xiii. p. 248.
† See 'Gardener's Chronicle' (1880), vol. xiv. p. 440.

## *Receipts and Payments of the Linnean Society from May* 1, 1880, *to April* 30, 1881.

| | £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|
| Balance at Bankers, 1st May, 1880 | | | | 431 | 2 | 2 |
| Interest on Invested Funds | £122 | 4 | 10 | | | |
| Admission Fees | 210 | 0 | 0 | | | |
| Compositions | 240 | 0 | 0 | | | |
| Annual Contributions of £2 2 0 | 4 | 4 | 0 | | | |
| Ditto ditto of 3 0 0— | | | | | | |
| for prior years | 69 | 0 | 0 | | | |
| for present year | 855 | 0 | 0 | | | |
| Sales of Society's Publications:— | | | | | | |
| Transactions | 157 | 16 | 1 | | | |
| Journals | 72 | 1 | 6 | | | |
| Library Catalogue | 1 | 2 | 0 | | | |
| Donations towards Publications | 61 | 0 | 0 | | | |
| Special Donation from Mr. Bentham | 50 | 0 | 0 | 1842 | 8 | 5 |
| | | | | £2273 | 10 | 7 |

| | £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|
| Taxes and Insurance | | | | 15 | 18 | 9 |
| Repairs and Furniture | | | | 97 | 6 | 4 |
| Coals and Gas | | | | 51 | 9 | 11 |
| Salaries, Pension, and Collector's Commission | | | | 423 | 4 | 0 |
| Petty Expenses (including Tea and Postage) | | | | 66 | 15 | 8 |
| Books purchased | | | | 104 | 8 | 3 |
| Bookbinding and Stationery | | | | 48 | 1 | 11 |
| Miscellaneous Printing | | | | 28 | 6 | 9 |
| Expenses of Society's Publications:— | | | | | | |
| Printing | £460 | 13 | 0 | | | |
| Plates | 305 | 5 | 2 | | | |
| | | | | 765 | 18 | 2 |
| | | | | £1601 | 9 | 9 |
| Investment | | | | 140 | 0 | 0 |
| Balance in the hands of the Bankers | | | | 532 | 0 | 10 |
| | | | | £2273 | 10 | 7 |

FREDERICK CURREY, *Treasurer.*

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The foregoing accounts have been examined and found correct.

| | | | |
|---|---|---|---|
| May 14, 1881. | CHARLES J. BREESE,<br>FRANK CRISP, | WILLIAM S. DALLAS,<br>H. T. STAINTON. | *Auditors.* |

And four had withdrawn, viz.:—

| | |
|---|---|
| C. J. L. Guppy, Esq. | Dr. Henry Scott. |
| Clements R. Markham, Esq. | Dr. Shearer. |

Against this, 37 new Fellows, one Foreign Member, and one Associate had been elected. As the Society stood at present, there were 670 Fellows, 50 Foreign Members, and 21 Associates, viz. a total of 741.

During the past year there had been received as Donations to the Library 106 volumes and 125 pamphlets and separate impressions of Memoirs. From the various scientific societies there had also been received 96 volumes and 248 detached parts of publications; besides 23 volumes obtained by exchange and donation from the Editors of independent periodicals.

The Council, at the recommendation of the Library Committee, had sanctioned the purchase of 80 separate volumes and 63 serials and parts of important works, continuations and otherwise; these latter equal to about 10 vols, or 90 in all acquired by purchase. The total additions to the Library were therefore 315 volumes and 373 separate parts.

Mr. Kippist had also presented framed Water-colour Sketches of Dr. Robert Brown's birth-place, and of his London residence in Dean Street, also of Sir Joseph Banks's Library, Soho Square.

The Society's Collections and Herbaria had been duly examined and reported on to the Council as in good condition.

After fifty years' service under the Society, Mr. Richard Kippist had last summer resigned his position as Librarian; and the Council, in acknowledgment thereof, had granted him a retiring pension.

Mr. J. G. Baker then read a letter from, and in the name of Mr. J. W. Miers presented a portrait of his Father, the late Mr. John Miers, as a memento of his connexion with the Society. Prof. Allen Thomson, also, at the instance of a small Committee of friends, presented a portrait in oil of Prof. St. George Mivart, formerly Zoological Secretary to the Society. A vote of thanks was accorded to the respective Donors.

Prof. Owen having taken the Chair, the President then delivered his Anniversary Address, the subject chosen being "Recent Prorgress in our Knowledge of the Development of the Ctenophora." Afterwards Dr. W. B. Carpenter proposed a vote of thanks to the retiring President for his interesting Address, and also for his official services during his Presidentship, which, having been put by him, was carried by acclamation.

The Secretary (Mr. B. D. Jackson) thereafter read the Obituary Notices of the several Fellows of the Society who had died during the year.

The Ballot for the Council having closed, the President nominated Dr. Braithwaite, Dr. R. C. Prior, and Mr. Jenner Weir as Scrutineers. The votes having been counted, and reported to the President, he declared that Alfred W. Bennett, B.Sc., Francis Darwin, M.B., Prof. E. Ray Lankester, Sir John Lubbock, Bart., and George J. Romanes, F.R.S., had been elected into the Council in the room of E. R. Alston, Esq. (deceased), Dr. Thomas Boycott, Prof. Michael Foster, Dr. J. Gwyn Jeffreys, and Prof. St. G. Mivart, who were removed.

The Ballot for Officers also having closed, the President nominated the same Scrutineers. The votes having been counted, and reported to the President, he declared the result as follows:—*President*, Sir John Lubbock, Bart.; *Treasurer*, Frederick Currey, Esq.; B. Daydon Jackson, Esq., re-elected *Botanical Secretary*, and George J. Romanes, F.R.S., elected *Zoological Secretary*.

## *Obituary Notices.*

Edward Richard Alston, F.G.S., F.Z.S, Member of the British Ornithologists' Union, Secretary of the Linnean Society, &c., was born at Stockbriggs, near Lesmahagow, Lanarkshire, on the 1st December, 1845. In boyhood he was very delicate and subject to asthma, which precluded his going to school; so that he was nominally educated at home. Practically he educated himself; and the success of this self-tuition, as carried out by one possessed of his force of character, has been amply demonstrated. A keen interest in natural history was developed in him from an early age; and numerous contributions from his pen upon zoology, its folk-lore, and field-notes, the results of his observations, both in his own country and on the Continent, appeared in the 'Zoologist' and in various Scottish magazines. A preliminary visit to Norway with Mr. J. A. Harvie-Brown led to a more extended tour in 1872, when the two friends pushed their explorations as far as Archangel; and contributed to 'The Ibis' of 1873 a paper which was an important addition to the limited knowledge then possessed respecting the geographical distribution of birds in North-eastern Europe. On his return, Mr. Alston took up his residence in London, devoting himself principally to the study of the osteology of the Mammalia, under the excellent guidance of Professor Flower at the College of Surgeons; and to the literature of the subject in the pages of the 'Zoological Record,' in which he edited this section until the year 1878 inclusive. In addition to this, in 1874 he assisted the late Professor Thomas Bell in the second edition of 'British Quadrupeds' to an extent which the original author was unable adequately to acknowledge in print; and in the same year he began to contribute papers to the 'Proceedings of the Zoological Society' on various Mammals, principally on the Rodents. The most important of these, nearly a score in number, are perhaps those on the Squirrels of the Neotropical region, published in 1878 and 1879; but all are valuable and remarkable for their conciseness and lucidity of exposition. In 1879 Messrs. Godman and Salvin commenced the publication of the 'Biologia Centrali-Americana,' in which the division Mammalia was written by Mr. Alston, who, in spite of failing health, managed to complete that section before he died. Although still young, his scientific attainments and social qualifications were by this time generally acknowledged; and in 1880 his elevation to a post on the Council of the Zoological Society, on various Committees of which he had long served, was followed by his election as Zoological Secretary here. But the seeds of early disease, which it was hoped he had outgrown, still lurked in his constitution; and, working to within three weeks of his death, he was carried off by acute phthisis on the 7th March, 1881, at the early age of 35.

Only those who have watched his career can estimate the loss which science has sustained by his untimely removal. In private life few men have been more universally beloved; for to great force of character and to a frank outspokenness when he deemed that the occasion required it, he united an amiability of manner and a conciliatory mode of expression which precluded the possibility of giving offence. The lot of any man may justly be envied whose loss is so sincerely mourned.

**John Blackwall** was born at Crumpsall Old Hall, near Manchester, on 20th January, 1789, and died on the 11th inst., in his ninety-second year. About 1820 he began to devote his attention to the true spiders (*Araneidea*); and thenceforward his ardour never flagged, despite failing sight and other accompaniments of old age. His work was prosecuted almost entirely without help from other observers; from time to time he issued six papers in the 'Edinburgh Philosophical Journal,' and a similar number in our own 'Transactions,' between 1833 and 1855. He also contributed fifteen articles in the 'Annals and Magazine of Natural History,' from 1851 to 1857, comprising a catalogue of all the then known British spiders. The 'Journal of the Linnean Society' has three papers by him in 1864 and 1870; but the work by which his reputation will be best maintained is his 'History of the Spiders of Great Britain and Ireland,' published by the Ray Society in 1861–64 in one volume. [A full obituary notice from the pen of the Rev. O. P. Cambridge will be found in 'The Entomologist' (1881), vol. xiv. pp. 145-150.]

**John Gould** was born in September 1804, at Lyme, in Dorsetshire; but his father moved afterwards to Guildford, in Surrey, and subsequently was appointed one of the foremen in the Royal Gardens at Windsor. Here the boy had good opportunity of studying British birds in the field; and his early specimens obtained about this time, when he was little more than fourteen years of age, show great skill in preparation. He came to London in 1827, then quitted his career as gardener, and received the appointment of Taxidermist to the Zoological Society's Museum.

In this capacity he enjoyed the friendship of Mr. N. A. Vigors, one of the then leading English naturalists; and by his means was first introduced into the world of authorship. His maiden essay consisted of "A Collection of Birds from the Himalayan Mountains," communicated by Mr. Vigors to Zool. Soc. Proc. (1830–31). Gould's drawings afterwards were transferred to stone by his accomplished wife. The success of this proved so gratifying, that 'The Birds of Europe' was forthwith begun, and finished in 1837, in seven vols. folio. Simultaneously with this important work, he issued, in 1834, a Monograph of the Rhamphastidæ or Toucans; and four years later a Monograph of the Trogonidæ, which reached a second edition a short time before his death. His journey to Australia resulted in his sumptuous volumes on the birds of that continent, which were issued in seven folio volumes from 1841 to 1848. Within a year from his return to Europe, he was completely overwhelmed by the loss of his devoted wife.

Possibly the most striking of Mr. Gould's publications is his 'Monograph of the Trochilidæ, or Humming-Birds.' It is a satisfaction to note that the original specimens collected for this work have been, since the collector's death, acquired by the authorities of the British Museum. The remaining works of the indefatigable author were:—'The Birds of Great Britain;' 'Handbook to the Birds of Australia,' in 8vo; 'The Birds of Asia;' 'The Birds of New Guinea;' the first part of a 'Monograph of the Pittidæ, or Ant-Thrushes of the Old World;' 'Icones Avium;' and 'Monograph of the Odontophorhinæ, or Partridges of America.'

These various works were published by the author himself, owing to the fact that his first work went vainly begging for a publisher; afterwards, when advantageous terms were offered, he declined to treat. His enthusiasm for the objects of his care was such as to make him refuse to sell a copy of one of his books to a person who wanted to become a purchaser, but had thought fit to speak to him slightingly of the performance.

He was elected a Fellow of this Society on January 15, 1833, and died in London, February 3, 1881.

**Gerard Krefft**, born at Brunswick in 1830, and died in February last at Sydney, Australia.

After passing some time in the United States, he went to Melbourne in 1852, and formed part of the Government Exploration Expedition in 1858. He returned to Melbourne as leader of the Expedition, and accepted a post as Assistant at the Museum; but soon after relinquished it, and returned to Germany. The next year, after a short stay in South Africa, he settled at Sydney as Curator of the Museum in succession to Dr. Pittard. A series of disagreements with the Trustees of that Institution ended by his retirement from his position there in 1874.

**Dr. William Lauder Lindsay** was born in 1828. As a schoolboy, he is said to have exhibited "that enthusiastic love of knowledge and foreign travel, as well as that facility with the pen and pencil, which distinguished his after years." His principal objects of study resulted in the issue of his 'History of British Lichens,' and many other papers which have appeared in our publications and elsewhere, which have been collected and republished. His work 'Contributions to New-Zealand Botany,' which came out in 1868, in 4to, was the outcome of a holiday employed by him in a search after health at the Antipodes. His last book treated of psychological subjects, and does not come within our scope. He died in November last.

Adolphus Reginald Pryor was born at Hatfield in Hertfordshire, 24th April, 1839; and after leaving school he proceeded to University College, Oxford. From quite an early period of his life he was much attached to the study of natural history; but gradually he came to devote himself more especially to Botany. In 1873 he began to make himself known by his contributions to the history of critical species of the British Flora, in the pages of the 'Journal of Botany' and 'Nature;' and in the following year he was elected a Fellow of this Society. The whole bent of his mind was singularly accurate; on even trivial matters he was most painstaking to ascertain actual facts or the foundations of reports. After some weeks' illness, he died at Baldock on the 18th February of this year, leaving his collections to the Hertfordshire Natural History Society, of which he was a Vice-President. His 'Flora of Hertford' was in an advanced state at the time of his death; and it is therefore hoped that ere long it will be published under the auspices of that Society.

## June 2nd, 1881.

Sir John Lubbock, Bart., F.R.S., President, in the Chair.

The Minutes of the Anniversary Meeting were read and confirmed.

Mr. Robert Romanis, D.Sc. Edinb., was elected a Fellow.

Dr. George Hoggan made some observations on the Lymphatics of Vascular Walls, specimens in illustration being exhibited under the microscope.

Mr. Thomas Christy also exhibited the following objects:—Living Rubber-plants from West Africa, viz. *Urostigma Vogelii* and a large specimen of *Tabernæmontana crassa*; products of *Pistacia Terebinthus*, viz. the nuts, the resin (for rendering paper water-proof), and the so-called Pistacia-butter separated from the resin, which is used for sweetmeats in the East; also China Turpentine from the same tree.

There were exhibited, on behalf of Mr. Henry J. Elwes, samples of pure Sulphate of Quinine made by Mr. Gammie, Superintendent of the Government Cinchona Plantations in Sikkim, from the bark of *Cinchona succirubra* and *C. Calisaya* by a new process discovered by himself, requiring no expensive chemicals or apparatus.

The following papers were read:—

1. "Observations on Ants, Bees, and Wasps."—Part VIII. Habits of Ants. By Sir John Lubbock, Bart., F.R.S., Pres. L.S.

2. "On the Genus *Plocamia*, Schmidt, and on some other Sponges of the Order Echinodermata." By S. O. Ridley, F.L.S.

3. "On two Species of *Spongida* from the Atlantic Sea-bed." By Prof. P. Martin Duncan, F.R.S., F.L.S.

4. "Mollusca of H.M.S. 'Challenger' Expedition."—Part X. (Fam. Pleurotomidæ, cont$^{d}$). By the Rev. R. Boog Watson, F.L.S.

The President gave the substance of a Circular received from the Local Secretaries of the British Association inviting Fellows of the Society to forward for exhibition at the Jubilee Meeting in York (August 31) Instruments of Scientific Research and such apparatus as might show historically, and otherwise, the progress made during the last half-century.

## June 16th, 1881.

Sir John Lubbock, Bart., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

John Forrest, Esq., of Australia, Alexander Somerville, Esq., and Capt. John Thomas Wright were elected Fellows.

Mr. W. Hood Fitch exhibited a set of drawings of new Orchids, species of *Odontoglossum*.

The Rev. H. Higgins showed a specimen of *Holothuria* which had been got between Patagonia and the Falkland Islands. This he had identified as *Psolus squamatus*; and it had been figured by Otho Fred. Müller in his 'Zoologia Danica.'

The Secretary read a portion of a Letter addressed to him by Mr. William Ferguson, of Colombo, in which he mentioned his having found *Wolffia arrhiza*, Wimm., in abundance in an abandoned stone-quarry, covering the surface of the water; and that in a recent trip to the Kandyan country he had discovered *Adiantum æthiopicum*, Linn., both these being new records for Ceylon.

Mr. J. G. Baker exhibited a specimen of the Inflorescence of the *Aloe Parryi*, the source of the drug. This was the first time it had flowered in this country, although the product of the plant had been known for two thousand years.

The following papers were read:—

1. "On the Flora of the Kuram Valley, Afghanistan."—Part II. By Surgeon-Major Aitchison, F.L.S.

2. "On Central-African Plants collected by Major Serpa Pinto." By Prof. Count Ficalho and W. P. Hiern, F.L.S.

3. "Revision of the Idoteidæ, a Family of Sessile-eyed Crustacea." By Edward J. Miers, F.L.S.

4. "On the Nostrils of the Cormorant (*Phalacrocorax carbo*)." By Prof. J. C. Ewart. Communicated by G. J. Romanes, Sec. L.S.

# PROCEEDINGS

OF THE

# LINNEAN SOCIETY OF LONDON.

## (SESSION 1881–82.)

### November 3rd, 1881.

Sir JOHN LUBBOCK, Bart., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

The President, in announcing the death of the Treasurer, Mr. Frederick Currey, spoke of the universal esteem in which he was held, and put the following Minutes of Council to the Meeting:—

> "That the Council and Fellows of the Linnean Society of London, having heard with the deepest regret of the death of the Treasurer, Mr. Frederick Currey, desire to place upon record their sense of the great loss sustained by the Society in his death, and their sincere appreciation of the valuable services rendered by him during twenty years as Secretary, and afterwards as Treasurer.
>
> "That a copy of the foregoing Resolution be communicated to the family of the late Treasurer."

These Resolutions having been spoken to by Mr. G. Bentham, Mr. H. T. Stainton, and Prof. St. George Mivart, were carried unanimously.

The Rev. William Henry Jones and the Rev. William Moyle Rogers were elected Fellows.

Mr. R. McLachlan exhibited a parthenogenetically-bred Beetle (*Gastrophysa raphani*), which was the second reared by Dr. J. A. Osborne in Ireland. The egg which produced it was one of a batch of forty-two laid by a virgin female on 14th June, and was hatched on 24th. Moults occurred on the 1st and 5th July; the metamorphosis to pupa 14th July; and the imago appeared 23rd July.

Dr. T. S. Cobbold showed under the microscope about one hundred eggs of *Bilharzia hæmatobia*, taken from a patient recently arrived from Egypt, suffering from hæmaturia. By adding water, nearly all the eggs were hatched during the Meeting.

Dr. M. T. Masters showed a spike of *Calanthe Veitchii*, interesting as a hybrid between species of two reputed distinct genera, *Limatodes rosea* and *Calanthe vestita*, the characteristics of both genera being curiously combined.

Mr. J. R. Jackson called attention to a box of skinned and sun-dried Bananas, recently imported from Jamaica, as an experiment for sale in the English market.

The following papers were read:—

1. "Notes on Gramineæ." By George Bentham, F.R.S., F.L.S.

2. "Description of some new Birds from the Solomon Islands and New Britain." By Edw. P. Ramsay, F.L.S.

3. "Report on the Arctic Drift-wood collected by Capt. Feilden and Mr. H. C. Hart in 1875–76." By Dr. W. R. McNab, F.L.S.

The President gave notice that the next Meeting would be made Special, to elect a Treasurer and Member of Council.

## November 17th, 1881.

Sir John Lubbock, Bart., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

The President having declared the Meeting made Special, pursuant to notice, announced that the Ballot would be taken for the election of a Treasurer and a Member of Council, and that it would remain open until 9 P.M. He then nominated Mr. C. J. Breese, Mr. T. Christy, and Mr. P. Duffy as Scrutineers.

A Letter was read from Mr. F. Innes Currey, conveying the thanks of the family of the late Treasurer to the Society for their kind expression of sympathy.

Mr. George Murray exhibited a bough of *Pinus Pinaster* with suppressed internodes of the lateral branches, the result of injury to the axis from which they sprang.

Dr. Francis Day showed examples of the stomachs of the Pilchard, with special reference to points in their digestion. These fishes arrive on the coast of Cornwall in the evening to feed; and at sunset the nets are shot between their feeding-grounds and the deep water. Examination immediately after landing the fish proved that in every instance the food was the *Zoëa* stage of Crustaceans; and whilst lying loosely in the pyloric division of the stomach, it was enclosed in a sac or sausage-shaped body. He was not prepared to state what might be the function of this membranous envelope.

The following papers were read:—

1. "On Cross-fertilization in *Roscoea purpurea* and *Salvia Grahami*." By A. Irwin Lynch, A.L.S.

2. "On the Habits of Ants, Bees, and Wasps."—Part IX. By Sir John Lubbock, Bart., President.

3. "On a Hampshire *Orchis* not figured in 'English Botany.'" By C. B. Clarke, M.A., F.L.S.

4. "A new Entozoon from the Ostrich, *Strongylus Douglasii*." By Dr. T. Spencer Cobbold, F.R.S., F.L.S.

The Scrutineers having examined the Ballot, and reported thereon to the President, it was announced from the Chair that Sir John Kirk, K.C.M.G., had been elected a Member of Council, and Mr. Frank Crisp had been elected Treasurer in the room of Mr. Frederick Currey, deceased.

## December 1st, 1881.

Sir John Lubbock, Bart., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

The following were elected Fellows:—Capt. P. Greene, Lieut.-Col. Swinhoe, G. S. Jenman, Esq., G. S. Walton, Esq., Dr. Wilhelm Landau, C. S. Wilkinson, Esq., Charles George Warnford Lock, Esq., George Samuel Valentine Wills, Esq., Rev. T. R. H. Sturges, and the Rev. George Wilson.

Mr. J. Harris Stone showed specimens of *Lychnis Viscaria*, and made remarks on it as a trap for ants. He had noticed that in Norway 95 per cent. of the specimens had dead ants, mostly on the glutinous nodes.

Dr. T. S. Cobbold exhibited diseased roots of *Stephanotis* which he had received from Dr. Masters; these were swarming with myriads of Nematoid worms, and also had minute Acari. He referred the worms to the genus *Leptodera*; and stated that thirty-three years before he had found similar parasites in the shrivelled leaves of *Gloxinia*.

The following papers were read:—

1. "Note on the Foliation and Ramification of *Buddleia auriculata*." By Dr. Maxwell T. Masters, F.R.S., F.L.S.

2. "On the Homology of the Conario-hypophysial Tract, or the so-called Pineal and Pituitary 'Glands.'" By Prof. Owen, C.B., F.R.S., F.L.S.

3. "On the Sense of Colour among some of the Lower Animals." By Sir John Lubbock, Bart., President.

4. "Note on a Proliferous Double Mignonette." By the Rev. G. Henslow, M.A., F.L.S.

## December 15th, 1881.

GEORGE BUSK, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

W. H. Coffin, Esq., E. Milners, Esq., and H. Parkes, Esq., were elected Fellows.

Dr. T. S. Cobbold exhibited a large Guinea-worm (*Dracunculus*) taken from a pony in Madras by Vet.-Surg. Frederick Smith. Only one previous instance of the occurrence of this parasite in the horse had been mentioned, and its authenticity had been doubted by Fedschenko and others.

Mr. G. S. Boulger showed a set of papier-mâché models of insectivorous plants for teaching-purposes, made under the superintendence of Prof. Cohn by Herr Brendel of Breslau.

Mr. T. Christy called attention to the volume of the Annual Report of the Commissioner of Agriculture for 1879, issued at Washington, containing much valuable information on the insects and other agents destructive to crops.

The following papers were read:—

1. "On some Points in the Morphology of the *Temnopleuridæ*." By Prof. P. Martin Duncan, F.R.S., F.L.S.
2. "On a new Species of *Gossypium* from East Tropical Africa." By Dr. Maxwell T. Masters, F.R.S., F.L.S.
3. "Note on *Abies Pattonii*." By W. R. McNab, M.D.
4. "On the Digastric Muscle, its Modifications and Functions." By G. E. Dobson, M.B., F.L.S.
5. "The Mollusca of H.M.S. 'Challenger' Expedition."—Parts XI. and XII. By the Rev. R. Boog Watson, B.A., F.L S.

## January 19th, 1882.

Sir JOHN LUBBOCK, Bart., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

The President announced the death of Mr. Richard Kippist, aged 70, who died on the 14th January, 1882. He had spent upwards of fifty years in the service of the Society, at first as Prof. Don's Assistant and afterwards as Librarian himself.

The following resolution was then put from the Chair, and carried unanimously, that

"The Fellows in Meeting assembled, on learning of the death

Currey, in memory of his long connexion with the Society. In accepting this donation, a special vote of thanks was accorded to Mr. F. Innes Currey and the rest of the donors.

Mr. T. B. Flower sent for exhibition *Potentilla rupestris*, L., from Montgomeryshire, *Polygonum maritimum*, L., and *Senecio squalidus*, L., from North Devon.

Mr. W. Bancroft Espeut, of Jamaica, forwarded for exhibition an albino specimen of Bat (*Molossus obscurus*, Geoff.), albinism in the Cheiroptera being of rare occurrence.

Dr. T. S. Cobbold showed living specimens of *Leptodera* under the microscope.

The following papers were read:—

1. "The Life-history of a Crocus, and Notes on the Classification and Geographical Distribution of the Genus." By George Maw, F.L.S.
2. "The Asteroidea of H.M.S. 'Challenger' Expedition."—Part I. By W. Percy Sladen, F.L.S.
3. "Note on Staminiferous Corollas in *Digitalis purpurea* and in *Solanum tuberosum*." By the Rev. George Henslow, M.A., F.L.S.

## February 2nd, 1882.

C. B. Clarke, M.A., Vice-President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

The Rev. B. Scortechini and John Marshall, Esq., were elected Fellows.

A Letter of invitation was read from the President of the Société Impériale des Naturalistes de Moscou to the Linnean Society, or its representatives, to be present at a Jubilee on May 14th next, N.S., in honour of Charles Renard. The Council communicated this to the Meeting in case any Fellow might wish to act as representing the Society at the Jubilee.

Mr. T. Christy exhibited samples of various vegetable fibres and manufactured pulp therefrom; also explaining the new chemical process employed by Mr. C. D. Ekman for making excellent paper quickly and economically from any sort of coarse plant-fibre.

The Secretary read a portion of a Letter from Mr. Thomas Edward, A.L.S., accompanying a specimen of a supposed rare marine animal caught on a line off the Banffshire coast. Dr.

Madagascar belonging to the genus *Epicauta*, allied to *E. ruficollis*, and brought to this country by Dr. Parker, Physician to the Queen of Madagascar. He also drew attention to specimens of Cinchona-bark cultivated in Bolivia, belonging to the *verde* and *morada* varieties of *Calisaya*, not hitherto cultivated in our colonies, but deserving of attention on account of their large yield of bark and good percentage of quinine; for which reasons the Bolivian planters prefer them to *Cinchona Ledgeriana*.

Mr. J. R. Jackson showed a native Australian Pituri-bag. Formerly the leaf of the plant only was known; but Baron F. v. Mueller has lately shown that it is derived from *Duboisia Hopwoodii*.

The following papers were read:—

1. "Note on the Medical Use of *Melaleuca uncinata*, R. Br." By J. G. Otto Tepper, F.L.S.

"In the 'Proceedings of the Royal Soc. of S. Australia' (vol. iii. p. 175, 1879–80) I drew attention to the curative properties of the above plant, and have since then used it exclusively myself in all cases of colds, cough, and sore throat arising from cold or continued speaking, with the best effects; so that I hardly know now what it is to be troubled by the above complaints.

"The wife of one of the residents some months ago was so seriously afflicted by catarrh and bronchitis, that her life was pronounced in danger by the medical adviser of the family. I asked the man to try the above plant, which grows plentifully about here, as it could do no harm. Early next morning he procured a sprig, and in a day or two the patient was out of danger. My children likewise use it with the same good result; and so do many people here about. The way it is applied is to masticate a few fresh or dried leaves, swallow the expressed sap with the saliva at convenient intervals; and the complaint *disappears* in a day or two quite imperceptibly, and without the slightest inconvenience. The taste of the leaves is aromatic, but not nearly so unpleasant as those of the other indigenous species, or of the various Eucalypts." (Accompanying were a few branches for experiment.)

2. "Remarks on Elephant Flukes." By Major-General Benson, F.L.S.

(The author referred to Dr. Cobbold's use of the term *Fasciola Jacksoni*, whilst he himself had described the flukes in the 'Rangoon Times' in 1867. Dr. Cobbold explained that initials only had been appended to the article referred to, in which the Elephant mortality was first correctly referred to these parasites; but the worm was first discovered by J. B. S. Jackson twenty years before the Rangoon letter, viz. in 1847.)

3. "Botanical Sketch in connexion with the Geological Features of New South Wales." By Robert D. Fitzgerald, F.L.S.

4. "Observations on Animal Intelligence." By J. G. Otto Tepper, F.L.S.

### February 16th, 1882.

FRANK CRISP, LL.B., Treas. and Vice-President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

A circular letter from the Royal Society of N. S. Wales was read, announcing that prizes would be given for the best essays on certain subjects in 1882 and 1883, some being on the natural history of Australia.

Mr. John Badcock exhibited a supposed Fungus obtained in Epping Forest. Mr. Charles Stewart afterwards gave his reasons for supposing it to be the zoogloëa stage of *Monas termo.*

Dr. Cobbold drew attention to male and female specimens of *Ascaris transfuga* found in the leg of a Brown Bear in Transylvania. Hitherto these parasites had only been found in the intestinal canal.

Mr. A. Grote showed *Geaster fornicatus* from Maidenhead.

The following papers were read:—

1. "Potato-disease, and the Theory of Fungoid Parasitism." By A. Stephen Wilson. Communicated by Prof. Trail, F.L.S.

2. "On the Shells of Aden." By Lieut. J. F. Cockburn. Communicated by Prof. Bayley Balfour, F.L.S.

### March 2nd, 1882.

Sir JOHN LUBBOCK, Bart., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Col. Richard Henry Beddome, Thomas Bonner Chambers, Esq., George Cheverton, Esq., The Rev W. H. Dallinger, C. D. Ekman, Esq., Prof. W. Fream, Rev. Richard Hooper, C. Dubois Larbalestier, Esq., Rev. R. P. Murray, and Charles Vipan, Esq., were elected Fellows.

Prof. P. M. Duncan exhibited, under the microscope, the pollen-tubes of *Crocus*, and Mr. Charles Stewart the ovule of the same genus.

Mr. C. F. White exhibited a series of drawings of the pollen of various plants.

Dr. T. S. Cobbold showed drawings of pollen-tubes of *Portulaca oleracea*, received from Mr. Krutschnitt of New Orleans.

The following papers were read:—

1. "Remarks on the Structure and Habits of the Coral-reef Annelid, *Palolo viridis.*" By the Rev. Thomas Powell, F.L.S.

2. "Contribution to the Lichenography of New South Wales." By Charles Knight, F.L.S.

3. "Contributions to the Ornithology of New Guinea." Part

VII. Diagnoses of new Species of Birds from the Astrolabe Range, S.E. New Guinea. By R. Bowdler Sharpe, F.L.S.

4. "Description of a new Genus and new Species of Insectivora from Madagascar." By Oldfield Thomas. Communicated by Dr. J. Murie, F.L.S.

5. "On a new Species of Sand-Martin (*Cotile*) from Madagascar." By R. Bowdler Sharpe, F.L.S.

### March 16th, 1882.

Sir John Lubbock, Bart., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

H. M. Brewer, Esq., V. I. Chamberlain, Esq., and A. P. Thomas, Esq., were elected Fellows.

Mr. Worthington G. Smith called attention to certain destructive Australian fungi new to this country, viz. *Capnodium australe*, fatal to Conifers, and *Isaria fuciformis*, a pest of grass in Kent and Sussex. The latter plant is supposed to cause a disease similar to diphtheria, and said to be fatal to cattle. He also showed a Bee caught in England having a profuse growth of the *Isaria* condition of *Cordiceps sphecocephala*, a West-Indian form, the latter being closely allied to ergot (*Claviceps*).

The following papers were read:—

1. "Observations on the British Salmones" (Trout). By Dr. Francis Day, F.L.S.

2. "On the Action of Carbonate of Ammonia on the Roots of certain Plants." By Charles Darwin, F.R.S., F.L.S.

3. "On the Influence of Carbonate of Ammonia on Chlorophyll-bodies." By Charles Darwin, F.R.S., F.L.S.

4. "'Challenger' Mollusca."—Part XIII. By the Rev. R. Boog Watson, F.L.S.

### April 6th, 1882.

Sir John Lubbock, Bart., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

John Blaikie, Esq., C. C. Lacaita, Esq., J. W. Phillips, Esq., and John B. Wilson, Esq., were elected Fellows.

Mr. Patrick Geddes exhibited a series of living specimens under the microscope, illustrative of the presence of Algæ in Radiolarians and certain forms of Cœlenterata.

Mr. Marcus M. Hartog afterwards drew attention to sections of *Cyclops* and the eye of *Daphnia*.

A series of thin sections of Woods was shown on behalf of Mr. Wilmersdorffer of Vienna.

The following papers were read:—

1. "On the Connexion between Geotropism and Growth." By Francis Darwin, F.L.S.

2. "Note on Negative Heliotropism in *Fumaria corymbosa*, Desf." By B. Daydon Jackson, Sec. L.S.

3. "Mollusca of the 'Challenger' Expedition."—Part XIV. By the Rev. R. Boog Watson, F.L.S.

4. "Some Observations on the 'Breaking' of the Shropshire Meres." By W. Phillips, F.L.S.

Six neighbouring meres in Shropshire, namely, Ellesmere mere, Kettlemere, Newton mere, Whitemere, Colemere, and Blakemere, whose collective area is about 311 acres, exhibit, with the exception of the last named, the phenomenon known locally as "breaking" in July and August. The water, ordinarily clear, becomes turbid and greenish in tint, and a scum forms on the surface, collecting in patches, sometimes smelling offensively. In Ellesmere mere this appearance is due to an abundance of *Rivularia articulata*, Ach., a rare species. Kettlemere and Whitemere exhibited a yellow scum, due to *Anabaina circinalis*, Rabh. Blakemere, although closely adjacent to Kettlemere, and believed by the country-people to be connected with it underground, has never been known to "break." Colemere began to "break" last autumn on October 15, and the opportunity to investigate it was lost. Newton mere showed an alga, believed to be *Cylindrospermum Ralfsii*, Kütz., ranked by Rabenhorst as a variety of *Sphærozyga Carmichaelii*, Harv. This mere "broke" as early as Feb. 23 this year, with two species, namely *Anabaina circinalis* and *Cœlospermum Kützingianum*, Naeg., the latter in very small proportion to the former. We have here, then, a double "breaking," in spring and autumn, caused by different algæ. See also 'Grevillea,' vol. ix. p. 4, and vol. x. p. 111.

### April 20th, 1882.

Sir John Lubbock, Bart., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

The President, addressing the Meeting, said that all present would no doubt have heard the sad news of the irreparable loss which science, the country, and the Linnean Society have sustained in the death of Mr. Darwin. Only a month ago they had the pleasure of hearing a paper of his, unhappily his last, which showed no sign of any abatement of vigour. The present was not the occasion to speak of the value of his scientific work, but he might say that while the originality and profound character of his researches had revolutionized natural history, he had also added enormously to its interest, and given, if he might say so, new life to biological science. Many of them, and no one more than himself, had also to mourn one of the kindest and best of friends. He begged to propose, as a small mark of respect to the memory of their late illustrious countryman, the greatest—alas that he could no longer say, of living naturalists! that after the formal business was concluded the Society should adjourn.

The Motion having been put, was adopted in silence.

The President announced that the following Auditors to examine the Treasurer's Accounts had been nominated by the Council:—

For the Fellows, Dr. John Millar and Mr. H. T. Stainton; for the Council, Mr. R. McLachlan and Mr. A. W. Bennett; and by show of hands these were unanimously elected.

Sir Thomas Dyke Acland, Bart., M.P., was elected a Fellow.

Specimens of *Fritillaria Meleagris* had been sent for exhibition by Mr. Matchwick; they were gathered near Burghfield Bridge, three miles from Reading; and the plant there is said to be rapidly becoming extinct.

### May 4th, 1882.

Sir JOHN LUBBOCK, Bart., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

The following Resolutions of Council were read and put from the Chair:—

> "That the Fellows of the Linnean Society in Meeting assembled desire to place upon record their sense of the great and irreparable loss biological science has sustained in the death of their most distinguished and venerated Fellow, Charles Robert Darwin, so long and so honourably connected with the Linnean Society; also to express their deepest sympathy with Mrs. Darwin and the family in their bereavement.
>
> "That a copy of the foregoing Resolution be communicated to the family by the Secretary."

These Resolutions were unanimously adopted.

Dr. Cuthbert C. Gibbes was elected a Fellow.

The Rev. R. P. Murray exhibited specimens of *Carex montana*, obtained at Heathfield in some abundance, in confirmation of Mr. Roper's statement in the current number of 'Trimen's Journal of Botany.'

Mr. John Murison showed *Helipterum eximium* from the Cape and *Ixodia achilleoides* from Australia, as samples of dried flowers; also Jungle-cotton from Nagpore.

The following papers were read:—

1. "On Algæ from the Himalayas." By Prof. G. Dickie, F.L.S.
2. "On new Varieties of the Sugar-cane produced by Planting in Apposition." By the Baron de Villa Franca and Dr. Glass,

Superintendent of the Botanic Garden, Rio de Janeiro. Communicated by the late Charles Darwin, F.R.S., F.L.S.

3. "Discovery of the Remains of the Great Auk on the Island of Oronsay, Argyllshire." By Symington Grieve. Communicated by Dr. J. Murie, F.L.S.

4. "On Cape Orchids, with a List of Published Species." By Harry Bolus, F.L.S.

5. "On the Occurrence of Single Florets on the Rootstock of *Catananche lutea*." By B. Daydon Jackson, Sec. L.S.

6. "Contributions to the Ornithology of New Guinea."—Part VIII. By R. Bowdler Sharpe, F.L.S.

7. "On the Prehensorial Organs ancillary to Generation in Male Butterflies of the Genera *Ornithoptera* and *Papilio*." By P. H. Gosse, F.R.S. Communicated by R. M$^{c}$Lachlan, F.R.S., F.L.S.

## May 24th, 1882.

### *Anniversary Meeting.*

Sir JOHN LUBBOCK, Bart., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Mr. H. T. Stainton, on the part of the Audit Committee, read the Annual Receipts and Payments as follows (see p. 32).

The Treasurer, Mr. Frank Crisp, then submitted a detailed explanation of the various items in the foregoing statement.

The Secretary then read his Report of the deaths, withdrawals, and elections of new Fellows for the past year as follows:—

Since the last Anniversary 16 Fellows have died, or their deaths been ascertained, viz.:—

FELLOWS (16).

Dr. William Addison.
William Atkinson.
A. H. Barford.
Rev. G. W. Braikenridge.
Dr. A. Carte.
Frederick Currey.
Charles Darwin.
M. P. Edgeworth.
Ronald C. Gunn.
Samuel Gurney.
J. A. Hankey.
G. C. Joad.
Henry Reeks.
Prof. Rolleston.
Dr. G. Rutherford.
Sir C. Wyville Thomson.

FOREIGN MEMBERS (2).

J. Decaisne.
Prof. Schleiden.

ASSOCIATE (1).

Richard Kippist.

## *Receipts and Payments of the Linnean Society from May* 1, 1881, *to April* 30, 1882.

| *Receipts.* | £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|
| Balance at Bankers on 1st May, 1881 | | | | 532 | 0 | 10 |
| Interest on Investments | | | | 129 | 13 | 9 |
| Admission Fees | | | | 240 | 0 | 0 |
| Annual Contributions | | | | 1009 | 4 | 0 |
| Compositions | | | | 177 | 0 | 0 |
| Sales of Publications:— | | | | | | |
| Transactions | £157 | 5 | 3 | | | |
| Journals | 98 | 17 | 7 | | | |
| Proceedings and Catalogues | 3 | 19 | 0 | | | |
| | | | | 260 | 1 | 10 |
| Donations | | | | 46 | 0 | 0 |
| | | | | £2394 | 0 | 5 |

| *Payments.* | £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|
| Taxes and Insurance | | | | 14 | 8 | 9 |
| Repairs and Furniture | | | | 40 | 15 | 7 |
| Coals and Gas | | | | 50 | 7 | 9 |
| Salaries and Commission | | | | 409 | 14 | 8 |
| Library:— | | | | | | |
| Books | £108 | 17 | 0 | | | |
| Binding | 58 | 0 | 7 | | | |
| | | | | 166 | 17 | 7 |
| Expenses of Publications:— | | | | | | |
| Printing | £504 | 14 | 7 | | | |
| Illustrations | 296 | 3 | 7 | | | |
| Distribution | 54 | 14 | 9 | | | |
| | | | | 855 | 12 | 11 |
| Miscellaneous Printing and Stationery | | | | 39 | 6 | 7 |
| Petty expenses (including Tea and Postage) | | | | 66 | 4 | 2 |
| Investment of Compositions | | | | 101 | 10 | 0 |
| Balance at Bankers on 30th April, 1882 | | | | 649 | 2 | 5 |
| | | | | £2394 | 0 | 5 |

FRANK CRISP, *Treasurer.*

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The foregoing accounts have been examined and found correct.

May 3, 1882.

H. T. STAINTON,
R. McLACHLAN,
A. W. BENNETT,
JOHN MILLAR, } *Auditors.*

During the year seven Fellows had withdrawn, viz.:—

W. C. Boyd.
H. G. Bohn.
F. H. Champneys.
G. E. Comerford Casey.
H. T. K. Kempton.
Capt. J. V. Legge.
Capt. Gilbert Mair.

And 40 Fellows had been elected.

During the past year there had been received as Donations to the Library 184 volumes and 113 pamphlets and separate impressions of memoirs. From the various scientific Societies there had also been received 117 volumes and 175 detached parts; besides 24 volumes obtained by exchange and donation from the Editors of independent periodicals. The Council, at the recommendation of the Library Committee, had sanctioned the purchase of 58 separate volumes and 60 parts of important works. The total additions to the Library were therefore 383 volumes and 348 separate parts.

The Secretary, on behalf of the President, having read the Bye-Laws governing the elections,—

The President then opened the business of the day, and the Fellows present proceeded to Ballot for the Council and Officers.

The Ballot for the Council having closed, the President appointed Lieut.-Col. Grant, Mr. Charles J. Breese, and Mr. Charles Tyler as Scrutineers. The votes having been counted and reported to the President, he declared the following Members to be removed from the Council, viz.:

Prof. G. J. Allman, Rev. J. M. Crombie, Mr. W. S. Dallas, Mr. Arthur Grote, and Prof. E. R. Lankester.

And the following to be elected into the Council, viz.:

Mr. Henry W. Bates, Prof. T. S. Cobbold, Prof. P. M. Duncan, Mr. E. Morell Holmes, Sir J. D. Hooker.

The President then delivered his Address (see p. 36), followed by Reports on the various botanical and zoological publications during the previous twelvemonth.

Sir J. D. Hooker then proposed the following resolution, viz.:—"That the thanks of the Society be presented to the President for his excellent Address; and that he be requested to allow it to be printed."

This having been seconded by Mr. S. W. Silver, was carried unanimously.

The senior Secretary read the Obituary Notices of deceased Fellows (see p. 58).

## June 1st, 1882.

**Frank Crisp**, LL.B., Treas. and Vice-President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Mr. Henry Charles Burdett was elected a Fellow.

Mr. H. N. Ridley exhibited a specimen of *Equisetum maximum*, Lam., having the spike of the fructification surmounted by a branch-bearing portion, which had been obtained at Darlestone Bay, near Swanage, Dorset.

The Rev. G. Henslow showed a specimen of malformed Wallflower in which the petals were suppressed, or represented by small green scales. It had no stamens, but malformed carpels took their place. He also drew attention to a Rhododendron in which every flower had an open pistil; and a garden Ranunculus with a mass of foliaceous petals.

Dr. T. S. Ralph, A.L.S., exhibited living specimens of *Vallisneria* from Sydney, Australia, supposed to differ somewhat from the European species *V. spiralis*.

The following papers were read:—

1. "Results of the Investigations on the Ceylon Coffee-disease." By H. Marshall Ward. Communicated by W. T. Thiselton Dyer, F.R.S., F.L.S.
2. "On some Cutaneous Nerve-terminations in Mammals." By Drs. George and F. E. Hoggan. Communicated by Dr. J. Murie, F.L.S.
3. "Note on two Himalayan Ferns erroneously described in the 'Ferns of British India.'" By C. B. Clarke, M.A., F.L.S.
4. "On Recent Additions to the Flora of New Zealand." By Thomas Kirk, F.L.S.
5. "On the Ascidians collected during the Cruise of the Yacht 'Glimpse' in 1881." By H. C. Sorby and Prof. Herdman, F.L.S.
6. "Descriptions of new or little-known Comatulæ." By P. Herbert Carpenter. Communicated by Dr. W. B. Carpenter, F.R.S., F.L.S.

## June 15th, 1882.

Sir **John Lubbock**, Bart., F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

The President nominated Prof. Busk, Mr. Frank Crisp, Sir Joseph Hooker, and Sir John Kirk, Vice-Presidents for the ensuing year.

The Rev. Robert Collie, Charles Anderson Ferrier, Esq., T. D.

Gibson-Carmichael, Esq., Sir J. D. Gibson-Maitland, Bart., W. D. Gooch, Esq., Michael Murphy, Esq., Rev. H. A. Soane, H. C. Stephens, Esq., H. G. W. Stephens, Esq., and James Turner, Esq., were elected Fellows.

Mr. W. T. Thiselton Dyer exhibited specimens of *Equisetum giganteum* from Brazil, which is said to have aerial stems attaining 30 feet in height.

Mr. C. B. Clarke, with reference to his paper in the Journal (Bot. xix. p. 206), showed *Orchis incarnata*, Linn., *O. incarnata*, Syme, and *O. maculata*, Linn., in quantity, from Hampshire.

Mr. H. N. Ridley exhibited a specimen of *Carex glauca* obtained at Swanage, with two female spikes and the lower male spike each arising from a complex utricle, the two female spikes on long pedicels. He also showed *Lolium perenne* from Hendon, in which the stamens and pistils were converted into glume-like bodies, usually tipped by stigmatic hairs.

Mr. G. J. Fookes exhibited Wallflowers similar to those shown at the last Meeting; also a monstrosity of *Clematis lanuginosa*.

Sir John Kirk showed specimens of the fruit, leaves, and rubber of *Landolphia florida*, from the island of Pemba, north of Zanzibar; also bells and rubber-beaters made and used by the natives of East Central Africa.

The following papers were read:—

1. "On *Dyera*, a new Genus of Rubber-producing Plants." By Sir J. D. Hooker, K.C.S.I., F.R.S., F.L.S.
2. "On the Apocynaceous Caoutchouc-yielding Plants of Malaya and Central Africa." By W. T. Thiselton Dyer, F.R.S., F.L.S.
3. "Note on some Habits of the Scorpions *Androctonus funestris*, Ehr., and *Euscorpius italicus*." By Prof. E. Ray Lankester, F.R.S., F.L.S.
4. "On a new Genus of *Collembola* allied to *Degeeria*." By George Brook, F.L.S.
5. "On a Marine Caddis-fly (*Philanissus*, Walker, =*Anomalostoma*, Brauer) from New Zealand." By R. McLachlan, F.R.S., F.L.S.
6. "On the Genus *Pleurechinus*, L. Agassiz." By Prof. P. M. Duncan, F.R.S., F.L.S.
7. "On a probable Case of Parthenogenesis in the House-Spider." By F. M. Campbell, F.L.S.
8. "On Indications of the Sense of Smell in Actiniæ." By W. Pollock and G. J. Romanes, F.R.S., Sec. L.S.
9. "List of Fungi from Brisbane, Queensland, with Descriptions of New Species." By the Rev. M. J. Berkeley, F.R.S., F.L.S., and C. E. Broome, F.L.S.

10. "Notice of a new Animalcule allied to *Pleuronema*." By F. W. Phillips, F.L.S.

11. "On a Collection of Ferns made by the Rev. R. B. Comins in the Solomon Islands." By J. G. Baker, F.R.S., F.L.S.

12. "On the *Teredo utriculus* of Gmelin, with Remarks upon other Ship-worms." By S. Hanley, F.L.S.

13. "On two new, and one wrongly referred, Cyrtandreæ." By H. O. Forbes. Communicated by W. T. Thiselton Dyer, F.R.S., F.L.S.

14. "Mollusca of H.M.S. 'Challenger' Expedition."—Part XV. By the Rev. R. Boog Watson, F.L.S.

## ANNIVERSARY ADDRESS OF THE PRESIDENT.

GENTLEMEN,—

ON the first intimation that you proposed to confer upon me the very high honour of electing me to the Presidency, I must confess to much hesitation whether it would be right to accept so great a responsibility. It was impossible not to be conscious that there were others much better qualified to occupy the post with advantage to the Society, both from their abilities and great services to biological science. I also felt that it would be impossible for me to prepare an Address such as those which you have been accustomed to hear. For even if I had been competent to do so in other respects, it would have been almost impracticable just in the middle of the Parliamentary Session. Under these circumstances I can but ask for your generous indulgence. I do so with the better hope of success, having been fortunately able to supplement my own shortcomings by the valuable aid of friends.

My distinguished predecessor in this Chair was of opinion that the object of the Presidential Address would be best fulfilled by making it as far as possible an exposition of recent progress in some branch of Natural Science; and the object he thus placed before himself, I think, we shall agree that he most successfully attained. On the present occasion, however, at any rate I will rather refer to the events of the last year with especial reference to their bearing on our Society.

In many respects we have undoubtedly much reason for congratulation. The Society was established in 1788, and no body which has nearly arrived at its centenary can expect to grow rapidly; nevertheless our numbers show a steady and continuous increase.

Our pecuniary position is also satisfactory, our balance in hand exhibiting an improvement of more than £100, besides which a small addition has been made to our permanent investments. During the past year, again, the papers and memoirs have been increased in number, those presented since the last Anniversary being 57 as against 52 in the preceding year. I think also that as regards the actual publications we have every reason to be satisfied. Of the Journal, 900 pages have been issued, with 53 plates and 66 woodcuts, in addition to 136 pages of Transactions, with 18 plates and 14 woodcuts. It is satisfactory also to find that the sale of our publications steadily enlarges, which not only leads to a welcome increase in our funds, but indicates the growing number of those who take an intelligent interest in, and derive a pure pleasure from, the study of nature.

Our Meetings have been of more than usual interest; and the attendance of Members continues to increase. For this we are of course primarily indebted to the authors of papers, but also to our Secretaries for their care in selecting beforehand those portions which are suitable for reading; and, lastly, to those Members and other gentlemen who have been good enough to bring us specimens for exhibition.

During the past year there have been received as Donations to the Library 184 volumes and 113 pamphlets and separate impressions of memoirs. From the various scientific Societies there have also been received 117 volumes and 175 detached parts; besides 24 volumes obtained by exchange and donation from the Editors of independent periodicals. The Council, at the recommendation of the Library Committee, has sanctioned the purchase of 58 separate volumes and 60 parts of important works, continuous and otherwise. The total additions to the Library were therefore 383 volumes and 348 separate parts or memoirs.

On the 28th March, with the kind permission of the Council, I had the honour of giving a Soirée in these rooms, at which I had the pleasure of seeing a large number of the Fellows of the Society and others interested in science. I mention this merely for the purpose of thanking, as I trust I may do, not only in my own name, but in yours also, those who contributed so greatly to the interest of the evening by the objects they were good enough to send for exhibition. I may specially mention:—

1. The Portrait of Mr. Darwin painted by John Collier.

2. An extensive series of Drawings of Pollen, drawn to a scale of $\frac{1}{500}$ diameters and from nature, by Charles Frederick White, F.L.S.

3. A series of Living Plants from Kew, exhibited by Sir J. Hooker, K.C.S.I. Among these a remarkable illustrative set of carnivorous plants.—Also a number of Wedgewood Medallions of celebrated Naturalists.

4. Some fine examples of the Flowers of rare Rhododendrons grown in this country, and exhibited by James H. Mangles, F.L.S., and the Hon. and Rev. J. Townsend Boscawen.

5. Camellias and various other Plants, exhibited by William Paul, F.L.S.

6. Drawings of Marine Animals and Dredging-apparatus, by Henry C. Sorby, F.R.S.

7. Models of Insectivorous Plants, by G. S. Boulger, F.L.S.

8. A series of the British Stalk-eyed Crustacea and Cases of Lepidoptera, by J. T. Carrington, F.L.S.

9. Insectivorous and Orchidaceous Plants, by Messrs. Veitch and Williams.

I cannot omit to mention the great Meeting of the International Medical Congress held here just a year ago, and which was so successful. Three of the Sections,—namely, those of Anatomy, of Diseases of the Skin, and of Diseases of the Teeth—held their sittings in our rooms. The Council had much pleasure in placing them at the disposal of the Members of the Congress; and I am sure that in doing so they were acting in accordance with the general wishes of the Society.

To the general success of the Jubilee Meeting of the British Association at York, the Biological Section, or, I might say, Sections, contributed their full share. The papers presented were numerous and interesting.

An important event of the last year has been the removal of the Botanical Collections of the British Museum from the old buildings in Bloomsbury to the new Natural-History Museum at South Kensington. On this subject Mr. Carruthers has been good enough to supply me with the following information, which I shall give almost in his own words.

The increased space which the erection of the new building has enabled the Trustees to devote to the Botanical Collections, and which was urgently needed, has secured the required accommodation for the Herbarium, and the opportunity of exhibiting in the public gallery such a representation of the Vegetable Kingdom as may give a visitor some notion of the groups of which it is composed, of their chief characteristics, and their geological and geographical distribution.

The Herbarium has been arranged in a continuous series. The Flowering Plants, occupying the great gallery, are arranged as regards the genera in the order of Bentham and Hooker's 'Genera Plantarum,' while the species follow the order of DeCandolle's 'Prodromus,' or of more recent monographs of particular orders.

The Vascular Cryptogams occupy cabinets in the pavilion; and the Cellular Plants are placed in two rooms on a higher floor of the pavilion, where great facilities exist for the minute examinations of these plants.

The earlier collections formed by Sir Hans Sloane are contained in more than 300 folio volumes, and comprise his own plants from Jamaica and plants from the first botanical explorers, such as Kamel, Kæmpfer, Cunningham, Bartram, Catesby, and Clayton.

In 1827 Robert Brown transferred to the Trustees of the

British Museum the large Collection of Sir Joseph Banks in accordance with the terms of his will. The extensive and important additions that have since been incorporated with the Banksian Herbarium have increased it more than twentyfold. These additions include the Shuttleworth Herbarium, containing the plants of Rœmer; the African plants of Welwitsch and Schimper; the American plants of Nuttall, Gardner, and Miers; the Asiatic plants of Pallas, Horsfield, and Wallich; the Australian plants of Robert Brown and Drummond; the Ferns of John Smith; and the Mosses and Liverworts of Wilson and Hampe.

To these have been added the plants collected in Ceylon by Hermann, and afterwards employed by Linnæus for his Flora of that island, and the plants collected by John Ray in his travels on the continent of Europe. The gap between the herbaria of Sloane and Banks has been filled up by the plants of Chelsea Gardens and the Collections of Dale and Nichols, presented to the Trustees by the Apothecaries' Company. Thus the great Herbarium and the other collections in the British Museum represent the progress of botanical science and the work of botanists in one unbroken series, from the days of Ray, Hermann, and Sloane to the present time.

The collection of seeds and fruits is arranged in cabinets placed along the centre of the Herbarium Gallery, following the same order as the plants in the Herbarium.

By the plan adopted in arranging the Herbarium cabinets in the gallery a series of secluded recesses between the projecting cases are obtained, where the collection can be consulted by the scientific worker without interruption.

The extensive Herbarium of British Plants is founded upon the collections formed by Sowerby while preparing his 'English Botany,' and now includes the Herbaria of my late partner Edward Forster, of Carroll, Trimen, Wilson, and others. Connected with the British Herbarium is an extremely important collection of original Drawings of British Plants, made by Sowerby and Salter for 'English Botany,' by Sowerby for 'English Fungi,' as well as unpublished Drawings of British Fungi by W. G. Smith, F.L.S., and the late Mrs. Russell.

The Drawings of Ehret, Parkinson, and especially of Francis and Ferdinand Bauer, enrich the general collection.

The public exhibition of botanical specimens in the Museum has hitherto consisted of plants or parts of plants that were thought to be suited to such a purpose. In the new gallery Mr. Carruthers determined to give a systematic representation of the whole Vegetable Kingdom. Such a representation is given as will enable an intelligent visitor to form some idea of the principal groups into which plants are divided, and of the points of resemblance or difference on which the groupings are based. The species themselves are represented by stems, foliage, and fruit; but as these fragments of dead and dried plants do not present the natural colour and habit of the plants to which they belong, and seldom make manifest the structural characteristics on which the classification depends, the use of coloured drawings has been largely resorted to. Each Natural Order of the Vegetable Kingdom is thus represented. The leading characteristics of the Orders are shown in diagrams. Lastly, by the aid of a small map the distribution of the plants included in it, both in time and space, are shown at a glance. These maps will, I think, be found most interesting and instructive. Specimens of fossil plants are incorporated in the series wherever the Order is represented amongst extinct species.

A walk round the gallery thus presents to the visitor a graphic representation of the Vegetable Kingdom, beginning with the Ranunculaceæ and passing in a descending series through the Dicotyledons, Monocotyledons, and Gymnosperms to the Vascular and Cellular Cryptogams.

The large specimens of trunks placed in the tall cases in the centre of the gallery are arranged in the same order as the principal series, and are supplementary to it.

As regards the Zoological Department also, with reference to which I am indebted for the facts to Dr. Günther, the past year proved to 'be exceptional with regard to the number and importance of acquisitions.' Of purchases, the most important were:—The entire collection of Birds formed by the late Mr. J. Gould; a selection of the most valuable specimens from the Eyton collection, especially skeletons figured in his 'Osteologia Avium;' part of the Baly collection of Phytophagous, and of the Bates collection of Heteromerous, Coleoptera; a large collection of the Hymenoptera of South Germany and Switzerland; and the celebrated collection of North-American Moths formed by Mr. A. R. Grote. The donations were likewise of great value. The Socotra Committee of the British Association presented a complete series of the animals collected by Professor I. Bayley Balfour during his exploration of the fauna and flora of that island; the Smithsonian Institution a large collection of the Marine Fishes of the Pacific coast of North America, obtained by the U.S. Fishery Commission; Messrs. Godman and Salvin their fine collection of Australian Birds; and the Lords Commissioners of the Admiralty an exceedingly rich collection of Marine Invertebrates from the Australian Seas, made by Dr. Coppinger during the Survey of H.M.S. 'Alert.' Finally, of the 'Challenger' Collections, the study-sets of the Birds, Pycnogonids, Echinoids, and Alcyonarians were received.

These and many other acquisitions of minor importance swelled the number of zoological specimens received in the year 1881 to 49,602, or about double the average number of the last ten years; and it must be considered a particularly fortunate circumstance that a large proportion of these additions consists of materials which have been already worked out by acknowledged authorities on their several subjects, and that objects on which so much labour has been bestowed are now safely deposited for future study and comparison in our National Collection.

Since the Act of Parliament has been passed which enables the Trustees to part with superfluous duplicates to other kindred institutions in the United Kingdom and the Colonies, numerous applications have been received for such specimens; and not less than 18,336 zoological objects have been transferred to provincial Museums in the course of last year. The selection from the stock of duplicates is left with the curators of those institutions, as they are, or ought to be, the best judges as to which specimens are the most desirable and suitable for their requirements.

Of the various publications which have been issued in connexion with the Zoological collections in the British Museum, one may be referred to as especially illustrating the progress of Zoology, and the corresponding rapid growth of the National Collection, viz. the second edition of the 'Catalogue of Batrachia Salientia.' The first edition, prepared in 1858, contained descriptions of 283 species, represented in the British Museum by 1691 specimens, whilst now the number of species described amounts to 800, and the collection of specimens to 4692. But the progress made within the period of less than 25 years is not sufficiently indicated by a mere comparison of these numbers. It appears still more marked when we consider the change that has taken place in the systematic arrangement of the class. This is now based upon the osteological investigations made in the period intervening between the two editions: it removes many of the incongruities which have puzzled the student of the geographical distribution of animals, and is sure to be of great assistance to the palæontologist.

Another important point connected with the British Museum is that, after long delay, fair progress has been made in the erection of a separate house for the specimens preserved in spirit. The presence of large quantities of such an inflammable liquid in the vaults of the Museum has been a source of much anxiety to the Trustees; and I am very glad that the Treasury has at length consented to supply the funds for the erection of this building, so as to remove a source of danger which might have led to a fearful catastrophe.

The separation from the great library at Bloomsbury threatened to be a serious hindrance to work; but since the Government has placed, for five consecutive years, £5,000 at the disposal of the Trustees for the purchase of books for the new Museum, the Departmental libraries have been so much increased as to contain now upwards of 24,000 volumes, in addition to mixed journals, publications of learned Societies, Voyages and Travels, which are being formed into a "General Library" common to all the Departments.

Passing from the British Museum to Kew, I may mention that the gallery and collection of pictures presented by Miss North will be open to the public early in June. It contains 615 oil-pictures, painted in every case by Miss North herself in the actual places represented—Singapore, Borneo, Japan, Java, New Zealand, Brazil, Jamaica, N. America, Ceylon, and India. The pictures are transcripts of extraordinary fidelity of all that is remarkable in the physiognomy of the places visited; and the *ensemble* supplies one of the most complete series of illustrations of the possibilities of plant-form which has ever been brought together.

The late George Curling Joad, a Fellow of the Society, who died last year somewhat unexpectedly, left directions that his extensive herbarium of European plants and his large collections of living herbaceous plants should be offered to Kew. The latter will entirely fill the large rock-garden which is now in process of being laid out.

The Rev. W. Allport Leighton, a Fellow of the Society and the well-known authority on British Lichenology, has presented the whole of his extensive herbarium of British Lichens to the National Herbarium at Kew.

Kew has also been enriched by the interesting herbarium of Hewett Cottrell Watson, the author of so many well-known works on British botany.

The exhibited collection of Cryptogamic Plants at Kew, which was formerly much scattered, has been brought together into one convenient room, and the arrangement much improved.

It is much to be hoped that a pathological collection illustrating the diseases of plants and trees (a subject to which, apart from its practical importance, much interest has been given by a recent remarkable address of Sir James Paget's) may be gradually developed.

Numerous collections have been received at Kew from Dr. G. W. Parker and others from Madagascar; and their examination by Mr. J. G. Baker has largely increased our knowledge of the vegetation of an area of singular interest from the point of view of geographical distribution, and which is rich also in peculiar endemic forms.

Mr. Dyer, to whom I am indebted for the preceding facts, considers that the great desideratum at present is a more detailed examination of the floras of the upper levels of Central Tropical Africa. The collections made by Mr. Thomson of Keith Johnston's Expedition, and by the late Mr. New on Kilima-njaro, show that there is reason to expect that fresh explorations of the mountain-floras would throw much light on the origin and former geographical relations of the peculiar flora of S. Africa, which seems to extend northwards at the higher levels. It is much to be regretted, in the interests of geographical botany, that the proposed expedition to Kilima-njaro has, for the present, fallen through.

Last, but certainly not least, though Mr. Jackson has been good enough to prepare a Report on the Progress of Botany during the year, I may, in connexion with Kew, allude here to the 'Genera Plantarum.' This vast undertaking has occupied the late President of the Linnean Society, Mr. Bentham, and Sir Joseph Hooker for the last quarter of a century. The first part was published July 1862. The printing of the second part of the third volume, concluding the work, has now began; and its publication may be hoped for before the next Linnean Anniversary.

The portion published includes the genera of Dicotyledonous plants. It deals with about 14,500 published genera, of which probably about half have been sustained. Probably when the whole is finished the accepted genera of flowering plants will amount to something like 10,000.

A most useful complement to the 'Genera Plantarum' will be the new edition of Steudel's 'Nomenclator,' the funds for the preparation of which have been supplied by the munificence of Mr. Darwin. The superintendence of the work has been entrusted to the Botanical Secretary, Mr. Daydon Jackson.

Considering that the Linnean Society is now all but 100 years old, it is somewhat remarkable that we have had during that long period only nine Presidents :—

| | | | |
|---|---|---|---|
| Sir James Edward Smith | was President | from | 1788 to 1828. |
| Edward Lord Stanley, M.P. | „ | „ | 1828 to 1834. |
| Edward Adolphus Duke of Somerset | „ | „ | 1834 to 1838. |
| Edward Lord Bishop of Norwich | „ | „ | 1838 to 1849. |
| Robert Brown | „ | „ | 1849 to 1853. |
| Thomas Bell | „ | „ | 1853 to 1861. |
| George Bentham | „ | „ | 1861 to 1874. |
| George James Allman | „ | „ | 1874 to 1881. |

Indeed, I am happy to say that Members of our Society are generally very long-lived; but within a year, though not all since the last Anniversary, we have had the misfortune to lose three of our Officers—Mr. Alston, Mr. Currey, and Mr. Kippist. They are referred to more at length in the Obituary Notices; but I cannot refrain from saying here how much they are personally regretted, and how much we miss them at our Meetings.

The Secretary has been good enough to prepare obituary notices of the Fellows whom we have been so unfortunate as to lose by death during the past twelve months. I regret to say that the list is unusually long.

The Society has already shown its sense of our irreparable loss in the death of Mr. Darwin, both by adjourning on the day it was announced, and also by passing a special vote of condolence with Mr. Darwin and the other members of his family. I had thought of attempting to give some short account of his work; but I understand that a series of articles will be devoted to it in 'Nature' by one eminently qualified for what is certainly no light undertaking. Mr. Darwin's death has drawn forth one harmonious chorus of admiration and regret. He will rank with Bacon and Shakespeare, Newton and Young, among the very greatest men whom our country has ever produced. Others have eloquently and truly dwelt on the patience and accuracy of his observations, on the profound philosophy of his works. I will here only say one word as to the additional interest which he has given to Biology, and the new source of happiness with which he has enriched our lives.

For my own part I have also to mourn one of the oldest, the kindest, the best of friends. It has been truly said that a description of Mr. Darwin which to those who had the privilege of his friendship would seem quite inadequate, to any one else might appear over enthusiastic, even extravagant.

In conclusion, Gentlemen, I must gratefully acknowledge the valuable assistance I have received from the Council, and especially from the Officers; and cordially thank the Fellows of the Society for their kind support during the past year.

## *Report on the Progress of Botany during the Year April* 1881 *to April* 1882. *Prepared for the Linnean Anniversary.*

If the past twelvemonth does not present any very strikingly phenomenal publications, it is probably quite up to the average of other years, whether we regard it as of facts accomplished or promised.

Heer Bohnensieg has continued his handy 'Repertorium' of the various articles in different journals, the volume published being for 1877; the still more important work of Dr. Just, the 'Botanischer Jahresbericht,' has been continued with unabated vigour. It is to be regretted that both works should lag so far behind date; but that is in a large measure compensated for by Dr. Uhlworm's 'Botanisches Centralblatt,' intended to give speedy intelligence of any thing new. A bibliography of the species of Diatomaceæ has been begun by Mr. F. Habershaw; and Dr. von Herder, the Librarian of the Imperial Botanic Garden at St. Petersburg, has completed his list of books bearing upon Russian botany. With Ledebour, Herder, and Trautvetter's labours, probably no country has had its botanical literature so completely focussed as Russia.

Some modifications of the received arrangement of plants have been severally proposed by Prof. Caruel, in Italy, and Prof. von Borbas, the latter confining his attention to Vascular Cryptogams. Concerning these I need not detain you.

Turning to Palæobotany, I must call attention to the valuable introduction to the regular study of fossil plants which is being brought out by M. Renault of Paris. The first two vols. are supposed to serve as handbooks for the first and second year of the study; the third vol., which is in preparation, will treat of the Ferns. One point to be deprecated in this book is its entire neglect of some good work done in this country, passing over it without the slightest allusion. Prof. Engler, of Kiel, has lately issued Part 2 of his 'Versuch einer Entwickelungsgeschichte der Pflanzenwelt;' but I regret to notice some carelessness in printing, one page in particular offers upwards of twenty misspellings. In France M. Zeiller has devoted nearly 200 pages to an exposition of the Carboniferous Flora of France; and the Comte de Saporta has issued another instalment of his 'Paléontologie française.' Dr. Oswald Heer has brought out a contribution to the Fossil Flora of Portugal; and our countryman Mr. Shrubsole has written an account of the Diatomaceæ found in the London Clay, with a list of the species by Mr. Kitton of Norwich. Prof. Newberry gives, in the 'Bulletin of the Torrey Botanical Club,' the Geological History of the North-American Flora; and Prof Lesquereux has brought out two volumes on the Coal Flora of Pennsylvania, with an accompanying atlas.

Of the more important productions purporting to be derived from various Botanic Gardens, I may mention Herr Treub's 'Annales du jardin botanique de Buitenzorg,' namely, the first part of the second volume; the first volume of an intended annual series of Prof. Eichler's on the Berlin Garden; and the completion of vol. i. of Signor Todaro's 'Hortus botanicus Panormitanus' in folio, with coloured plates; these, however, are coarsely executed.

I have a much longer list of works on morphological and physiological botany. Besides the current abstracts which appear from time to time in our scientific serials, I am bound to mention Grassmann's work on Vegetable Physiology, Detmer's on the same subject, and Pfeffer's also, the last author devoting the first volume of 383 pages, the only one published as yet, to the consideration of *Stoffwechsel*. The last year has also witnessed the publication of continuations of Cohn's 'Beiträge,' Sachs's record of work at Würzburg, and Pringsheim's researches into the nature of Chlorophyll, the latest addition, and certainly one of the most important on the subject. On a more restricted scale, Von Höhnel on some secretionary organs of plants; a memoir by Jancewski, in Polish, on comparative experiments on the sieve-tubes; Karl Noerner on the development of the embryo in Grasses; and a criticism (and further experiments) on Mr. Darwin's book 'The Power of Movement in Plants,' by Prof. Julius Wiesner of Vienna. This brings us to a group of papers of one of our own Fellows, Mr. Francis Darwin, on the power possessed by leaves of turning themselves at right angles to incident light.

The explanations hitherto given of the power possessed by leaves of placing themselves at right angles to the direction of incident light are:—(1) That of Frank; and (2) the opposite theory of Sachs and De Vries. Frank's idea was that the leaves are transversely heliotropic (or, as Mr. Darwin called it, *diaheliotropic*); that is, he supposed them to be endowed with a specific power of growth which is not as yet capable of further analysis, and which must at present be accepted just as geotropism, for instance, is accepted as a term expressing the inexplicable power which plants have of growing vertically upwards. Sachs and De Vries, on the other hand, believe that the phenomena can be explained as being due to the interaction of the ordinary growth-tendencies exhibited by leaves. Of these only two need here be mentioned, viz. apheliotropism and apogeotropism. If we imagine a plant growing out of doors and illuminated from the zenith, then if its leaves are apheliotropic, that is, if they tend to curve away from the light, they will of course bend downwards and point towards the ground; but if they are at the same time apogeotropic, they will tend to curve upwards away from the ground. Now Sachs and De Vries suppose that the horizontal position of leaves which are exposed to zenith illumination is due to a balance struck between some such opposing growth-tendencies as those above sketched. Francis Darwin has shown, however, that at least for certain plants, e. g. *Ranunculus Ficaria*, this explanation is untenable. He employed the klinostat or slowly-rotating apparatus of Sachs (which, by the way, was originally invented by John Hunter), by which means the influence of gravitation is destroyed. And he found that even under these circumstances, when apogeotropism could not come into the problem, the leaves were able to adjust themselves so as to be at right angles to the light. Here there can be no question of a balance between opposing tendencies, since the important factor of apogeotropism is removed; it is therefore clear that Frank's views are strongly supported by these experiments; and we must for the present accept the term diaheliotropism. Such a term is merely a convenient label for a certain region of ignorance, and should stimulate rather than hinder further research into the subject.

Another paper by Mr. F. Darwin, on Climbing Plants, was published in a popular form in the journal 'Kosmos;' whilst his remarks on "Circumnutation in certain one-celled Organs" came out in the 'Botanische Zeitung' last July. A paper by Mr. Shattock was also read before the Society, on the reparative processes which occur in vegetable tissues. The author's investigations had been prosecuted without knowing of Frank's researches on the same subject, but were confirmatory of the latter. Herr Schwarz has the combined influence of warmth and light on the duration of the annual phenomena of vegetation. These investigations were brought out in Engler's 'Botanische Jahrbücher;' where also Hildebrand has a memoir on the similar topics of the duration of life and methods of plant-growth, with their causes and development. Dr. Pfitzer, of Heidelberg, who had previously published a sketch of his views concerning the practicability of classifying Orchids according to their habits of growth, has brought out a sumptuous folio in exposition of his theme. Like nearly every writer who has treated of Orchids, the work is printed in large type and on luxuriant paper, which greatly enhances the cost to the ordinary student. Two subjects, the *Victoria regia* and Orchids, seem to impel authors to make use of the largest paper and print. Last, but far from least, are the two papers of the late Charles Darwin, which, although they will fairly come into next year's Address, as they will not be issued for a few weeks, yet, with the remembrance of the worker taken from us so lately, I cannot refrain from alluding to them. Their subject was on the action of carbonate of ammonia on the roots and chlorophyll-bodies of plants. The woodblocks to illustrate these papers had been approved by the author before his death.

Systematic botany next claiming our attention, I will first mention the issue of the third volume of MM. DeCandolles' 'Monographiæ.' The most important groups monographed in this volume are the Commelinaceæ by our Councillor, Mr. C. B. Clarke, a worthy continuation of his labours on the Bengal plants of that Order; and the Cucurbitaceæ by M. Cogniaux, the latter occupying more than 600 of the large 8vo pages. Dr. Luerssen's 'Medicinisch-pharmaceutische Botanik' has been carried on; as most know, in spite of its title, it is a systematic work of an important type.

Dr. Buchenau, of Bremen, has made some remarks on Alismaceæ, Butomaceæ, and Juncagineæ in Engler's 'Jahrbücher;' these Orders have also been monographed by M. Micheli in the volume of DeCandolles' 'Monographiæ' just mentioned. Mr. Baker has drawn up a synopsis of the genus *Crinum* in the 'Gardener's Chronicle,' to which last week he has added another species, described from a drawing by Miss North in the gallery at Kew. Mr. Maw, in the same Journal, has published diagnoses in English of the genus *Crocus*, as a forerunner of his elaborate treatise on the genus to which he has consecrated so much time and pains. Baron Ferd. von Mueller is continuing his description of the genus *Eucalyptus*, the eighth decade having reached this country only yesterday (May 23rd). Mr. Bentham has published in our Journal a sketch of the classification of grasses he purposes adopting in the forthcoming part of the 'Genera Plantarum.' Dr. Emil Koehne has published his monograph of Lythraceæ in Engler's 'Jahrbücher;' and in that Journal will also be found an article on Valerianaceæ. Before quitting this portion of the subject, I may mention that the large collection of critical forms of *Rubus* acquired by M. Genevier has recently passed into the hands of Prof. Babington.

Of Mosses, I have to report that Dr. H. Leitgeb, of Graz, has concluded his admirable work on Hepaticæ with the 6th Heft. Limpricht has set forth his views on the systematic arrangement of Sphagnaceæ in the 'Botanisches Centralblatt,' vol. viii.

Pfister's recent German work on Ferns by nature-printing is worth mention, perhaps, as showing how the fashion or rage for ferns is extending from the English-speaking races, who have hitherto held it as a monopoly. This, with one other German work, are the only exceptions I know, not having seen a single French production on the popular side of the subject. Dr. Prantl is engaged on the Schizæaceæ, and has issued a preliminary statement in Dr. Engler's 'Jahrbücher.'

I find that there has been considerable activity in works relating to Algæ. Prof. J. G. Agardh has published a new contribution in the 'Acta' of Lund University; and a memoir of Georg Klebs on the lower forms of Algæ runs through five numbers of the 'Botanische Zeitung.' Schmidt's Atlas of the Diatomaceæ has been carried on; whilst a paper by Dr. P. T. Cleve on some new and little-known Diatoms is written wholly in English, according to the author's practice; it may be seen in the 'Handlingar' of the Royal Swedish Academy of Sciences. M. Prinz has some remarks on sections of Diatoms in rocks from Nykjöbing, in Jutland, in the 'Bulletin' of the Belgian Microscopical Society. Herr Grunow has virtually monographed the genus *Grammatophora* in the 'Botanisches Centralblatt.'

As regards Lichens, I have only to report that Dr. A. Minks has followed up his work 'Das Microgonidium' by a new one, of which the first part only has appeared to the present time. It is entitled 'Symbolæ Licheno-mycologicæ,' and professes to discuss the boundaries between Lichens and Fungi.

Turning to Fungi, we find some very noteworthy issues. Prof. De Bary and M. Woronin have issued their fourth series of contributions on the morphology and physiology of Fungi. Prof. Fries, of Upsala, has issued another fasciculus of his 'Icones selectæ hymenomycetarum nondum delineatarum,' in folio; and Oscar Brefeld his fourth Heft of his researches on the lower Fungi. Lastly, I may mention the publication in our own 'Transactions' of Mr. Phillips's revision of the small genus *Vibrissea*.

My survey of general works ending here, I turn to the consideration of local works.

Since our last Anniversary Herr Nyman has published Part 3 of his most useful 'Conspectus floræ Europææ;' the next Part will complete the work: and it is earnestly to be hoped that an adequate index will be added, the skeleton index such as he gave in his earlier work the 'Sylloge' is disappointing and meagre. Dr.

Kanitz, of Carlowitz in Hungary, has also published an inedited fragment of Grisebach, styling it 'Reliquiæ Grisebachianæ;' this came out as a Supplement to the Hungarian 'Magazine of Botany,' but is procurable separately: it is of such a character as to make us regret that the author was not able to complete his work on the same plan.

Herr Hackel has published a monograph on the European species of *Festuca*; and Warnstorf, on the species of *Sphagnum* from the same continent. Cleve and Grunow have also elaborated a quarto on the Arctic Diatomaceæ.

As regards our own island, I may indicate Prof. Babington's 'Manual,' which has reached an eighth edition, the first having been brought out in 1843. Only one other 'British Flora' has passed through so many editions, that of Dr. Withering; but the latter died after the publication of the third edition. Dr. Braithwaite is prosecuting his painstaking British Moss-flora, the plates of which are admirably done. Dr. Cooke has continued his 'Illustrations of British Fungi,' and has started a new publication on the British Freshwater Algæ, a work much wanted, since Hassall's book is both inadequate and when met with unconscionably dear. An unpretentious pamphlet by Mr. W. C. Mathews on the Flora of the Clent Hills is a useful addition to our local lists. Dr. Buchenau, of Bremen, has produced a Flora of the East Friesland islands. Here, as might be expected, many weeds of cultivated land on the mainland are absent. Sand-loving plants largely prevail, woods and undergrowth of coppices are quite wanting, whilst dune-plants are abundant. M. F. Crépin's concise 'Manuel de la Flore de Belgique' has reached a fourth edition. M. Koltz has brought out the second part of his Flora of Luxembourg, devoted to the Cryptogams, the previously published part having dealt with the flowering-plants. Dr. Van Heurck has issued his third fasciculus of his Synopsis of the Belgian Diatomaceæ. Dr. Rabenhorst's 'Kryptogamen-flora von Deutschland,' which practically includes the whole of Central Europe, is now in course of reissue, brought down to date; of the first portion on Fungi, by G. Winter, several parts have been issued. Čelakowský has completed his large Prodromus of the Bohemian Flora in 4to; and a new Flora of Silesia by Fick has made its appearance. Signor R. de Visiani is still publishing his Supplements to his 'Flora dalmaticæ;' and Count Solms-Laubach has worked up the Coralline Algæ of the Gulf of Naples. Dr. Kanitz has finished his enumeration of Roumanian plants by the issue of the last part.

The Spanish peninsula has still to thank foreigners for the most important contributions to Iberian botany. Dr. Willkomm, of Prague, has commenced his 'Illustrationes floræ hispanicæ,' in 4to, to accompany the 'Prodromus' of himself and Dr. Lange; the latter has also published some diagnoses of new Spanish plants in the Danish Scientific Journal. MM. Marès and Vigineix have brought out a 'Catalogue raisonné des plantes vasculaires des îles Baleares' in an 8vo vol. of 370 pages.

Dr. Wainio has added a considerable memoir to the literature of Lapland Lichens in the 'pro Fauna et Flora Fennica;' and E. van Lindemann has issued the first volume of his 'Flora chersonensis' at Odessa.

Dr. Ascherson has drawn up a nominal list of species known to occur on the central northern African district; this appeared in the 'Botanisches Centralblatt,' viii.; whilst the first volume of a more important work has also been issued, namely, Dr. E. Cosson's 'Compendium floræ Atlanticæ.' This volume, from the pen of the highest authority on the North-African flora, has been naturally looked forward to with much interest; but this preliminary volume is filled with introductory matter, and does not deal with a single species.

Of Central-African plants, the only addition to our knowledge that I can cite is that of Prof. Ficalho and Mr. Hiern, which came out in our 'Transactions,' it being a description of the new plants brought back by Major Serpa Pinto, the Portuguese traveller. A catalogue of Canary-Island plants was also printed in the form of an inaugural dissertation by Fritz Sauer at Halle; and M. E. Bescherelle has published an account of the Mosses found in Réunion and neighbouring islands in the 'Annales des Sciences naturelles.'

Of Asian botany, I may mention that Dr. Maximowicz, our Foreign Member, is still publishing his Diagnoses of new Asian plants; and that the third fascicule of M. L. Pierre's Forest-flora of Cochinchina is also in our hands. Mr. W. H. Gregg has published a textbook of Indian botany in a small volume of 80 pages at Calcutta, which I have not seen; and Dr. Masters, in our own Journal, has given a full account of the Conifers of Japan. In the last Botanical part issued of our Journal also, there will be found an enumeration of the plants collected by Dr. Aitchison in his second journey into Afghanistan.

Previous to Aitchison, there was only one noteworthy collection from Afghanistan in this country, namely, that made by W. Griffith during the first Afghan war. Though numerous as to species, the specimens were, to a great extent, imperfect, quite in contrast to Dr. Aitchison's admirably prepared specimens; seventy of these latter have been described, and thirty of them figured in our Journal. Besides Griffith, Honigberger passed through Afghanistan; but his collections were very trifling, and were described by Endlicher in his 'Sertum cabulicum.' Honigberger was not able to collect in any quantity, but only a few scraps here and there: it is a marvel how he managed to escape with his life. The flora is of very great interest; it shows the peninsula flora dying out towards the north, and the Central-Asian flora doing the same southward. Little is known of the Central-Steppe flora save through the Russian botanists.

Amongst the novelties, the following are of special interest:—

*Oxygraphis Shaftoana.*

*Rosa Ecæ*, with yellow flowers, named in compliment to Mrs. Aitchison (Ece).

*Aitchisonia rosea*, the type of a new genus of Rubiaceæ.

*Pertya Aitchisonii*, a composite of the tribe Mutisieæ, and a member of a genus only known previously from Japan; also remarkable as being the most western member of the Old-World Mutisieæ (if *Hochstetteria*, a genus of doubtful affinity, be excepted).

*Rhododendron*, two small-flowered species.

*Carex fissirostris*, only known before from Marocco.

*Fingerhuthia africana*, not as yet been found between South Africa and Afghanistan.

A flora of Iceland has been published by Ch. Grœnlund, of Copenhagen.

The account by Dr. Asa Gray and Sir Joseph Hooker of the Vegetation of the Rocky-Mountain region, published in the Bulletin of the U.S. Geological and Geographical Survey of the Territories, has been translated into German. Mr. E. Tuckerman has published the first volume of a synopsis of North-American lichens. Signor Spegazzini on Argentine Fungi, and three fasciculi of the splendid 'Flora brasiliensis' have come to hand since our last Anniversary; these contain another portion of the Gramineæ by Doell, and the Palms by Dr. Oscar Drude. A posthumous work by Hampe on Brasilian Mosses has also come out; and Dr. Philippi has elaborated a catalogue of all the Chilian plants hitherto described.

The unwearied Baron F. von Mueller has issued a census of the genera of Australian plants, and continued his important work 'Eucalyptographia,' as previously mentioned.

Mr. J. Buchanan of Wellington, New Zealand, has brought out a Manual of the Grasses of that colony, with 64 plates.

As to plant-diseases, I may mention the papers by Mr. W. Bidie and Dr. Cooke on the Coffee-leaf disease in our Journal, and the final Report of Mr. Marshall Ward when in Ceylon.

Prof. M'Nab has given in our Journal an account of his endeavours to ascertain the species of Arctic drift-wood; but the results, owing to various causes, were unsatisfactory.

I have thus endeavoured in the time and space allowed me to run over the chief publications of the last twelvemonth. Numberless smaller contributions have been passed by in silence, simply because of the absolute need of severe compression of the subject into a few pages.

## *Summary of the Chief Zoological Work from April* 1881 *to April* 1882.

### A. IMPORTANT WORKS OF COMPREHENSIVE CHARACTER.

1. Continuation of the 'Challenger' Reports (Moseley's Corals &c.).
2. Continuation of the Reports of the Norwegian North-Atlantic Expedition (of 1876–78).
3. Balfour's 'Embryology,' vol. ii.

Whilst alluding to these, the preliminary Report of the Italian Expedition may be mentioned. This expedition has carried on explorations in depths of 2000 fathoms and more in the Mediterranean, and has obtained results contradictory of those arrived at by Dr. Carpenter some years since. The typical forms of the deep-sea fauna, such as *Hyalonema*, *Willemoesia*, certain Crinoids and Holothurians, have been recognized by Prof. Giglioli, who has conducted the expedition.

### B. DISCOVERIES IN PARTICULAR GROUPS.

PROTOZOA.—The studies of Dr. August Gruber on amœboid Rhizopoda, and on the division of *Euglypha* (Zeitschr. für wiss. Zoologie, vols. xxxv., xxxvi., 1881–82) have added to our knowledge of unicellular organisms. Dr. Gruber has shown that the shell of the young *Euglypha* which is budded from its parent is formed by a number of minute shell-plates (about eighty in number), which pass from the parent organism on to the extruded protoplasm destined to form a new individual. Subsequently the nucleus extends and divides, exhibiting the fibrillar structure seen in other cell-nuclei when dividing; one half of the divided nucleus passes into the protrusion which forms the new individual.

The Gregarinæ and Psorosperms have received special attention from Professor Bütschli (Zeitschr. für wiss. Zool. vol. xxxv. 1881), in connexion with his great work on Protozoa now being published in the series known as Bronn's 'Thierreich.' The conjugation and encystation of the bilocular Gregarinæ parasitic in Arthropods, and the formation of spores and spore-ducts has been studied by Bütschli, who in the main confirms Aimée Schneider's results.

Dr. Ganle, of Leipzig, has described a curious worm-like body, often seen in the blood-cells and other tissue-elements of the edible frog. This worm-like body is recognized by Prof. Ray Lankester (Quart. Journ. Micr. Sci., January 1882) as the young form, or "falciform condition," of a *Gregarina* already described by Eimer and by Lieberkuhn as producing "psorosperms" or spores in the kidney and intestinal epithelium of the frog.

Important observations tending to connect the organisms known as "Amœbæ" with the paradoxical Myxomycetes have been made by Surgeon-Major D. D. Cunningham, of the Indian Medical Service. In a paper on "Microscopic Organisms occurring in the Intestinal Canal" (Quart. Journ. Micr. Sci. vol. xxi.), he describes the life-history of *Protomyxomyces coprinarius*, an amœboid organism intermediate in characters between the Protomonadinæ and the Myxomycetes. Its immature forms occur both in health and disease as inmates of the digestive canal of man and the lower animals. It only attains full development when cultivated external to the bodies of the animals in which it occurs. Very remarkable spore-formation is described and figured by Dr. Cunningham.

Mr. Saville Kent has also independently advocated the view that the Myxomycetes should be regarded as animals allied to the Flagellata. The valuable monograph on Ciliate and Flagellate Infusoria by this naturalist is approaching completion, the sixth and last part being now in the press.

CŒLENTERATA.—Professor Eilhard Schulz continues his foundation-laying studies on the histology of the Sponges in the Zeitschr. wiss. Zoologie. Vosmaer, in Holland, and Stuart Ridley, in this country, have published valuable studies on specific and generic characters afforded by the hard parts of Sponges. Amongst Hydrozoa, the most important work has been the second part of Häckel's great monograph, containing the species of the Scyphomedusæ or Acraspedæ, beautifully illustrated. Häckel has also described various strange abnormalities of development of *Aurelia* kept by him in an aquarium. Some eggs of this jelly-fish, instead of passing through a scyphistoma-stage and then producing ephyræ by transverse fission, actually developed directly into young medusæ: other eggs presented intermediate phenomena, carrying out only partially the normal order of development. Fraipont seems clearly to have shown that the eggs of *Campanularia*, as maintained by Van Beneden, jun., for this genus and for *Hydractinia*, do develop from cells of the endoderm of the hydrocaulus. On the other hand, Kleinenberg maintains that in *Eudendrium* and other Tubularians the eggs are formed from cells of the ectoderm; and points out the necessity of distinguishing between the observation of generative cells which may eventually lie *in* either ectoderm or endoderm and the tracing back of such generative cells to original constituent cells of these layers (Zeitschr. wiss. Zoolog. vol. xxxv.).

The magnificent memoir of Dr. Chun on the Ctenophora of the Bay of Naples (Leipzig, Engelmann), deserves notice here not only on account of the large amount which the author adds to our knowledge of this remarkable group, but also as being a sample of the series of memoirs which Dr. Anton Dohrn, the Director of the Zoological Station at Naples, has started in connexion with that institution. These memoirs are published by aid of subscription, each subscriber being entitled annually to a large quarto illustrated volume. The memoirs already issued are such as to render it a duty for every well-wisher of zoological science to become a subscriber.

PLATYHELMIA.—Passing on to the Worms, we find that very important work has been done during the past year, on the one hand by Dr. Arnold Lang of the Zoological Station, and on the other hand by M. Fraipont of Liége. Dr. Lang has made known for the first time with anything like accuracy the form of the nervous system in the Planariæ, the Trematoda, and the Cestoidea. Speaking generally, we may say that Dr. Lang's observations are confirmatory of those of Dr. Hubrecht on the Nemertines. Dr. Hubrecht discovered a complete nerve-tunic in the latter group of worms in which certain longitudinal cords are differentiated. Dr. Lang finds, similarly, much as recent researches have made known for the Medusæ, a complete subepidemic nerve-plexus in the three groups of flat worms studied by him: within this nerve-plexus longitudinal trunks (as many as eight) may be differentiated. The study of a remarkable segmented Planarian worm, *Gunda segmentata*, has convinced Dr. Lang of the close affinity of the Platyhelmia to the Leeches on the one hand, and to the Ctenophora on the other. The comparison with the latter group has been carried out in detail by Dr. Lang; and he is led to the conclusion that the alimentary canal with its ramifications is identical in the two cases, and that the excretory canal-system of the flat worms is but a special development of this system. When the identification by Häckel of the parts of a Ctenophore, such as *Pleurobrachia*, with those of a craspedote Medusa is borne in mind, the immense importance of the conclusions to which Dr. Lang's researches tend becomes apparent. For a proper appreciation of his views we must refer to his original papers in the 'Mittheilungen' of the Zoological Station of Naples. Scarcely less interesting have been Fraipont's discoveries with regard to the termination of the fine ramifications of the excretory or nephridial canal-system of Planariæ, Cestoids, and Trematodes, in the form of minute funnels leading into an excessively fine network of intercellular spaces, which must be regarded as a canalicular or spongiform body-cavity ('Archives de Biologie'). The exact limits of the nephridia of these worms are thus determined, as lately established by Bütschli for Cercaria; and it is apparent that in structure and relation to the general organization of the animal they are identical with the excretory organs or nephridia of the Rotifera.

MOLLUSCA.—Not less important, and really following on the same lines, are the researches which have this year been published on the most worm-like of the Mollusca, viz. the Chitons and the vermiform Neomenia, Proneomenia, and Chætoderma. It is plain, from Hubrecht's account of these animals, which form the group of Amphineura (Quart. Journ. Micr. Sci., April 1882), that the nervous system, consisting essentially of two or of four longitudinal cords united in a cephalic ganglion and by numerous transverse commissures, is to be considered only as a step in advance upon that of the Planariæ described by Lang. Similarly, the nephridia or excretory organs appear (especially from the researches of Sedgwick upon *Chiton*, (Proc. Roy. Soc. 1882) to be a pair of contorted tubes opening into a more or less rudimentary body-cavity by one end, and to the exterior by the other. Whilst these Amphineura furnish close points of contact with the flat worms, there is no difficulty in tracing to the structures found in them the special modifications of nervous system, renal organs (nephridia), and general form of body seen in the other Mollusca. Especially valuable in this respect is the memoir of Dr. Spengel (Zeitsch. wiss. Zoologie, vol. xxxv.), entitled "The Olfactory Organs and the Nervous System of the Mollusca.—A Contribution towards the recognition of the Unity of the Molluscan Type." The gradual loss of bilateral symmetry in the Gastropod Molluscs, and the morphological consequences of torsion of the region of the body covered in these animals by the shell (which no doubt has been the cause of such torsion) are explained and enforced by means of new arguments based on new facts.

The development of the Polyzoa, probably the most difficult problem (not excluding even that of the Mammalia) which embryologists have yet attacked, has formed the subject of two important memoirs by Dr. Jules Barrois, who, it is gratifying to state, has recently been authorized by the French Government to establish at Villa Franca, near Nice, a public zoological laboratory, which will be open to the naturalists of all countries who may wish to make use of it in the prosecution of their investigations.

Crustacea.—Apart from the important work (always progressing) of the identification of new species and genera in this group, the investigations of Dr. Delage, a pupil of M. de Lacaze Duthiers, on the circulatory apparatus of the Edriophthalma deserve special notice. A remarkable supra-neural artery similar to that of the Scorpions and *Limulus* has been discovered in these forms by M. Delage by means of careful injections (Archives de Zoologie expérimentale, 1881). The observations of Mr. Conrad Beck (Ann. & Mag. Nat. Hist. 1881) on new Cladocera from the English lakes show how much interesting material there still exists under the hands of English naturalists who may choose to explore localities as yet but little studied; whilst Prof. Lankester's studies on *Apus cancriformis* (Quart. Journ. Micros. Sci., April 1881) show that even a well-known form may furnish new facts of importance to careful observation.

Arachnida.—The latter naturalist has recently raised the question of the affinities of the King-Crab; and has endeavoured, by a careful comparison of the external and internal structure of this animal with that of the Scorpion, to show that the true position of *Limulus* is, as maintained fifty years ago by Straus-Durckheim, among the Arachnida (Quart. Journ. Micros. Sci., July and October 1881). The most important conclusion to which Prof. Lankester is led is, that the four pairs of lung-books of the Scorpion are the equivalent of the four hindmost pairs of gill-books of the King-Crab, the most anterior of the five pairs of the King-Crab's gill-books corresponding to the "pecten" of the Scorpion, whilst the genital operculum in each animal corresponds both in structure and position.

VERTEBRATA.—In the great group of Vertebrates embryologists have been active. We have not only Mr. Balfour's second volume of the 'Comparative Embryology,' but also a paper from his pupil, Mr. Heape, on the development of the Mole (*Talpa*) (Proc. Roy. Soc.); and an important memoir by the veteran embryologist, Prof. Kölliker of Würzburg, on the development of the germ-layers of the Rabbit. Both these memoirs tend to show that the development of the Mammal is a very strangely modified one; and that it cannot be brought under the general scheme of development by formation of two primary layers (ectoderm and endoderm) through invagination, as had been erroneously maintained by Edouard van Beneden of Liége.

Dr. Berthold Hatschek, in a beautifully illustrated memoir, has given an account of the development of *Amphioxus*, which is a confirmation, and in some points a correction, of that of Kowalewsky (Arbeiten. Wiener Anstalt. 1881).

Professor Milnes Marshall, of Manchester, has summarized the results of his own and other recent observations on the development of the cranial nerves and the primitive segments of the vertebrate head in an essay published in the 'Journal of Anatomy,' April 1882, which marks an important step in knowledge.

Amongst Fishes, the most important new work of the year has been that of Professor F. M. Balfour on the development of the paired fins of Elasmobranchs (Proc. Zool. Soc. 1881, p. 651), showing that the paired fins are an anterior and posterior differentiation of a once continuous lateral fin comparable to the continuous median dorsal fin.

Amongst Amphibia, we have Prof. Parker's studies on the skulls of Anura (Phil. Trans., special volume) and on the skulls of Urodela (Trans. Zool. Soc.); and Mr. Boulenger's Catalogue of the Anura in the British Museum.

Amongst Birds, the systematic treatises of Salvin and Godman on the fauna of Central America, and of Salvadori on the ornithology of the Moluccas, are important contributions. Not less so the palæontological memoirs of O. C. Marsh on the characters of *Archæopteryx*, and on Jurassic Birds and their allies, in the 'Geolog. Magazine' of 1881.

Palæontology furnishes the most important new matter in reference both to Reptiles and Mammalia. We have Marsh's "Classification of Dinosauria" (Amer. Journ. of Science, 1881), and "Wings of Pterodactyles" in the same Journal. Cope, "On the Classification of the Creodonta" (American Naturalist, 1881), a group supposed to be intermediate between Carnivora and Marsupials. The same author describes the feet of the little-known extinct *Toxodon* (said by him to be Proboscidean in character); and also describes a Lemurine animal, *Anaptomorphus homunculus*, with a dentition like that of Anthropoid apes.

Part 1 of Mr. Dobson's 'Monograph of the Insectivora' has been issued in this year. It promises to be a valuable work; already the author has shown, *inter alia*, that the West-Indian *Solenodon* has nothing to do with the Centetidæ of Madagascar, as had always been supposed before.

The placenta of Mammals still offers large scope for research. Prof. F. M. Balfour has thrown much light on the real significance of the various forms of Placenta by his paper on the "Evolution of the Placenta and its bearing on Classification;" the most important point being the separation of the discoid placentæ into two widely remote groups, viz. the "protodiscoidal" and the "metadiscoidal," the latter containing only Man and the Simiæ. The placentation of the Marsupials is still in as much obscurity as it ever was. Prof. Chapman, of Philadelphia, has offered some observations on the placentation of *Macropus* in the 'Trans. Ac. Nat. Sci. Philadelphia,' 1881; but it is indeed surprising that, with all our zoological gardens and successful breeding of these animals, no more definite knowledge is attained.

A work of a comprehensive character, of which the first part has appeared in 1881, is the magnificently illustrated folio volume by Prof. Gustav Retzius, 'On the Auditory Organ of the Vertebrata.' This is one of the most thorough and masterly treatises of the day, the comparative anatomy of the microscopic tissue-elements, as well as of larger parts, being most fully considered and set before the reader.

Hasty and full of gaps as this summary is, it would be altogether too partial were a notice omitted of the 'Vergleich. Physiologisch. Studien' of Dr. Krukenberg, of Heidelberg. A series of Parts, each containing a variety of memoirs, have been issued by this young physiologist during the past year and its predecessor. It is impossible too strongly to recommend them to the notice of English naturalists, not on account of the importance of the results set forth by the author, though this is great, but because this Comparative Physiology to which Dr. Krukenberg is devoting himself is, without any possibility of doubt, the path which Biology has to tread in the immediate future. Dr. Krukenberg has trained himself in the methods of the Physiological Laboratory (he is a pupil of Prof. Kuhne); and now he proceeds to apply the graphic methods of record, the chemical analyses, the toxicological conclusions of the physiologist of frogs and rabbit, to the wider field of zoological material. The colours of birds, of marine animals, the blood of worms and molluscs, the movements of the heart of Tunicates, the digestion of

Sea-anemones and other Invertebrates,—these and endless other topics are touched on, in the spirit of the pioneer, by Dr. Krukenberg. The field is an enormous one, and has been already trodden by a few stragglers from among the ranks of contemporary English naturalists. But there is no shadow of a doubt that here lies the future of experimental physiology, and not only of that branch of biology, but indirectly of morphology also. For it is only when we have an adequate physiology of lower as well as higher organisms that we can hope to deal with the problems of morphological evolution. It will be sufficient justification for Dr. Krukenberg's vigorous attempts, if he shall have succeeded in forcing the attention of biologists to the physiology of the lower animals, which urgently and irresistibly demands the services of experimental investigators.

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## Obituaries.

William Addison was one of the senior Fellows, having been elected in January 1831. A Surgeon by profession, he entered upon practice in 1825; and for many years resided at Brighton, where he died. In addition to his connexion with our Society, he was F.R.S.; but his chief published works are wholly medical.

Alfred Henry Barford was born in Birmingham on the 14th August, 1832, receiving his early education at a school in the Old Square, kept by the Rev. E. Bristow, and subsequently at King Edward the Sixth Grammar School, of which Prince Lee, who became Bishop of Manchester, was then Head Master. At the early age of fourteen he left to take a private tutorship in the family of Mr. Gataire, of Coton Hall, near Bridgnorth, remaining there four years. Thence he went to help one of his old masters, the Rev. A. K. Thompson, Head Master of the Dudley Grammar School; from there to Dr. Batt, of Cornwall Terrace, Regent's Park. Whilst here, he matriculated at London University in 1852, in 1854 obtaining the degree of B.A. In 1858 he purchased the school of Dr. Batt, which he carried on until four months before his death. On December 1, 1859, he was elected Fellow of this Society; and in 1874 he was called to the Bar; but his health giving way, he abandoned the idea of practising. He died suddenly on 15th August last, one day after his forty-ninth birthday. Although his failing health was the cause of his giving up school-teaching, his friends had no suspicion of the end at hand.

Alexander Carte was born about 1820, graduated as B.A. in the University of Dublin in 1834, and proceeded to the degrees of M.A. and M.B. in 1840. About the same time he obtained the appointment of Curator of the Museum of the Royal College of Surgeons, Dublin; and a few years later he was made Director of the Natural-History Museum of the Royal Dublin Society. When Dr. Carte entered upon these latter duties, he found the collections of the Dublin Society in a very embryotic stage—some few stuffed birds in a case and a few miserable-looking quadrupeds. The Museum, now by Act of Parliament the National Museum for Ireland, owes its present existence to the labours and perseverance of Dr. Carte; he had to commence at the very beginning, and to obtain not only the specimens, but also the cases to hold them. Although a well-taught anatomist, Dr. Carte was not a zoologist in the general acceptance of the word; and his printed contributions to science were not numerous. He was of the type of those who can make collections, but cannot disclose their treasures to best advantage. A list of his papers, written by himself or in conjunction with Prof. Macalister, will be found in the Royal Soc. Cat. of Scientific Papers.

He was made Fellow of the Royal College of Surgeons, Ireland, in 1844, and elected a Fellow of our Society in 1859; in addition, he was a Member of several foreign societies. He died on the 25th September 1881.

**Frederick Currey** was born at Norwood, in Surrey, August 19th, 1819, his father, Mr. Benjamin Currey, being Clerk of the Parliaments. He received his education at Eton and Trinity College, Cambridge, where he obtained a Scholarship, took his B.A. degree in 1841, and proceeded to M.A. in 1844. In that year he was called to the Bar, and thenceforth practised as conveyancer and equity draughtsman.

His earliest work on scientific subjects appears to have been a translation of Schacht's 'Das Mikroskop,' which was issued in 1853, and so well received as to call for a second edition two years later. In 1854 he contributed a paper to the 'Microscopical Journal' on two new Fungi; and in the fifth volume of the 'Phytologist' were printed some observations on the "Fungi of the Neighbourhood of Greenwich." The 'Microscopical Journal' about this time contains several papers on the more obscure points in the life-history of cryptogams and on local botany.

The Greenwich Natural-History Club, established in 1852, had appointed a Committee to draw up a Report on the flora of the neighbourhood. Mr. Currey being chosen Chairman, drafted the Report, which was printed as an 8vo pamphlet early in 1858, in which 395 fungi were enumerated. The title runs, 'On the Botany of the District lying between the Rivers Cray, Ravensbourne, and Thames.'

In the first volume of the 'Journal of the Linnean Society' he described the development of *Sclerotium roseum*, Kneiff., which was named by the Rev. M. J. Berkeley, *Peziza Curreyana*. In 1856 he was elected Fellow of our Society; in 1857 he communicated an account of the existence of amorphous starch in a

Tuberaceous fungus to the Royal Society, followed by his being elected into that Society in 1858. On the retirement of Mr. J. J. Bennett, in 1860, from the Secretariat of the Linnean Society, Mr. Currey was chosen as his successor; and continued in that office until 1880, when he relinquished it to undertake the duties of Treasurer, which position he held at the time of his death.

In 1859 he undertook his most extensive work in the shape of a translation, with considerable additions by the author, of Hofmeister's 'Vergleichende Untersuchungen ueber der... hoeherer Kryptogamen.' This was published in 1862 by the Ray Society, under the title 'On the Germination, Development, and Fructification of the Higher Cryptogamia,' &c. This was quickly followed by his edition of Dr. Badham's 'Esculent Funguses of England' in 1863, in which he restricted himself to corrections and bringing the work down to date. Several communications will be found in the Journal and Transactions of the Society, which are set out in the 'Catalogue of Scientific Papers.' Amongst them may be mentioned "Notes on British Fungi" in 1864, and his last contribution, "On a Collection of Fungi made by Mr. Sulpiz Kurz," 1876. With Daniel Hanbury he prepared "Remarks on *Sclerotium stipitatum*, Berk. & Curr., *Pachyma Cocos*, Fries, and some similar Productions,' 1862; and, with Dr. Welwitsch, "A Description of the Fungi collected by Dr. F. Welwitsch in Angola during the years 1850–61" (1870).

The latest production of his pen was issued last spring in the Report of the West Kent Natural-History, Microscopical, and Photographic Society, an association which had absorbed the Greenwich Natural-History Club before mentioned. The paper is entitled "On some Useful and Noxious Fungi;" it is a popular *résumé* of well-known facts; but is of interest as testifying to his abiding interest in local natural history. He was twice President of this Society, on each occasion for a term of two years.

For some years he had considered his health precarious; but only a short time before his death, from an affection of the liver, was any alarm felt by his family. He died at Blackheath on September 8th, and was buried at Weybridge, 13th September, where his wife had been interred some years before. His collection of Fungi, by his express desire, has been added to the Herbarium of the Royal Gardens, Kew; and many of his books have been generously presented by his family to the Library of the Linnean Society.

Mr. Currey's long official connexion with the Society had given rise to a large circle of friends; whilst his ever kind and genial manner had attached them to him by close ties of esteem. By all his loss will be felt as that of a personal friend, an officer of large experience whose place it will be difficult to fill

ROBERT DARWIN. As the President has so admirably dealt with the influence exercised by our late Fellow in every department of human thought, no further observations on that point need be offered here, whilst the still recent events and the notices which have been so abundantly inserted in the public prints, together with the copious memoir in course of publication by my colleague in the Secretariat, absolves from any extended recapitulation of the events of his life.

He was born on February 12th, 1809, at Shrewsbury, his grandfather being Dr. Erasmus Darwin, one of the earliest of our Fellows, and his father Dr. Robert Waring Darwin. The poetical effusions of Dr. Erasmus are well known; but it is not so well known that he was the chief mover in an anonymous translation of the 'Systema vegetabilium,' edited by Reichard, entitled 'The Families of Plant, &c., by a Botanical Society at Lichfield.' The proof of this lies in several letters from Dr. Erasmus in the Banksian correspondence belonging to Lord Brabourne. Dr. R. W. Darwin had previously published a volume entitled 'Principia botanica' as a concise and easy introduction to the sexual botany of Linnæus, published at Newark, 1793. The preface is signed with the initials only.

His voyage with Captain Fitzroy in H.M.S. 'The Beagle' resulted in the publication of his observations in the narrative of that Commander's voyage; it was afterwards published separately, and called ed. 2. Whilst on this voyage Mr. Darwin first observed those variations in animal and vegetable life when subject to modifying surroundings, which were formulated only several years later. It must be a just source of pride to every Fellow of the Society that the first sketch of this epoch-making theory was promulgated in the rooms of the Linnean Society. Robert Brown having died on June 10th, 1858, the subsequent Meeting of the Society held on the 17th adjourned after formal business only; a Special Meeting was therefore convened out of the Session, on July 1st, to elect a Member of Council to fill Mr. Brown's place. At this Meeting there was read a letter, dated June 30th, from Sir Charles Lyell and Dr. Hooker, embodying extracts from Mr. Darwin's writings on this subject, and Mr. Wallace's letter from the Malay Archipelago, which was the proximate cause of Mr. Darwin's reluctance to publish his views being overcome. This notable communication will be found in the third volume of our Journal. The 'Origin of Species,' when published in the following year, led to memorable debate. Several Fellows withdrew from the Linnean Society because the President refused to take steps to eject the author.

Of the remarkable series of works which followed the above there is no need of a detailed list; particulars of them are in every hand. Suffice it to say that his last elaborated papers, viz. on the influence of carbonate of ammonia on the roots of plants and on chlorophyll-bodies, were read in this room only one month before his death; whilst a still more recent communication to the Society received his final notes only a few hours previous to his disease. These papers, when they reach the hands of the Fellows, will be seen to bear the marks of his unhasting and unfailing care.

His death, which came upon us suddenly, happened at his residence at Down on Wednesday, 19th April; news having only reached London on the afternoon of the next day, the Society adjourned without transacting more than the necessary business. The funeral in Westminster Abbey on April 26th was attended by a concourse of mourners, probably unequalled in its kind since Linnæus was buried in the Cathedral of Upsala in January 1778.

**Joseph Decaisne** was born at Brussels in 1807, and was the second of a family of three brothers, who had a hard struggle for the means of subsistence. His elder brother Henri showed so decided a bent for painting, that his mother removed with her children to Paris. Joseph began the study of medicine; but after a short time he turned from it with dislike, and exchanged objects of study with his younger brother Pierre, who had applied himself to botany. In 1824, when 17 years of age, Joseph Decaisne was taken on as a working gardener at the same Museum where he afterwards held so distinguished a position. After being appointed Chef du Carré des Semis, a post which had been previously held by Bernard de Jussieu and the brothers Thouin, he was placed by Adrien de Jussieu as his Assistant in the Chair of Rural Botany. This was the epoch from which his first publications took their origin.

His earlier works were on descriptive and geographic botany, embracing the new plants brought from Japan and the East; also completing Jacquemont's account of the plants collected in Asia, and a monograph of Asclepiads, done at the instigation of M. DeCandolle, &c.

In 1847 he was elected into the Académie des Sciences, in the Section of Rural Economy; in 1850 he was chosen to succeed Mirbel in the Chair of Cultures at the Jardin des Plantes. The remainder of his life was spent as assiduously as the earlier portion. With his pupil Thuret he worked at the Algæ with a view of working out their entire sexual history. With Le Maout, he produced his 'Traité générale de Botanique,' a work which has appeared in most of the European languages, and owes much of its extended popularity to the drawings which Decaisne had so diligently amassed during his career. His most important work perhaps was his 'Le Jardin fruitier du Muséum,' of which twelve 4to volumes have been issued. For many years he was Editor of the botanical portion of the 'Annales des Sciences naturelles.' He died at Paris on February 8th last; and was followed to his grave by an immense concourse of people. His plants and papers were bequeathed to the State Botanic Garden at Brussels.

He was not able to avoid all personal controversy; but there must be few who do not regret that his closing years should have been disturbed by the issue of an inviduous publication actuated by personal feeling against Decaisne.

**Michael Pakenham Edgeworth** was the youngest son of Richard Lowell Edgeworth and Frances Anne, daughter of the Rev. Dr. Beaufort, and was half brother of Miss Maria Edgeworth, the novelist. He was born on the 24th May, 1812; that is, he would have reached his sixtieth birthday today had he lived so long. In September 1823 he entered the Charterhouse, from whence, in 1827, he went to Edinburgh, where he first began to study oriental languages; and there also he studied botany under the elder M'Nab. After a distinguished career at Haileybury, he went to India in 1831 in the Civil Service. He was appointed to Ambala and Saharunpore, where his administration received the approbation of his superiors and the grateful appreciation of the natives. In 1842 he came home on leave; and in 1846 he married Christina, daughter of Dr. Macpherson, King's College, Aberdeen, returning the same year to India.

On his way out he took advantage of the steamer coaling at Aden to look about him for plants; he published his results in the Journal of the Asiatic Society of Bengal under the title of "Two Hours' Herborization at Aden:" of the forty species he collected in that brief space of time in so frequented a locality, eleven were new to science.

He was stationed at Banda till 1850, when he was selected as one of the five Commissioners for the Settlement of the Punjaub, first at Moolton, afterwards at Jullundur; but he was obliged to leave India owing to a sunstroke, and, to his deep regret, he was never able to return thither. He died suddenly in the Island of Eigg on 30th of July last.

His local lists of Indian plants have received the warm commendation of Drs. Hooker and Thomson in the Introductory Essay to their 'Flora Indica.' He also published some papers which have appeared in our publications; a Grammar of Kashmiri; and his last work, on Pollen, which saw the light in 1878.

**Ronald Campbell Gunn** was born at the Cape of Good Hope in 1808; but passed the greater part of his life in Tasmania, holding several official positions, arriving there in 1830. He began to work at the flora of that island in the following year; and his labours in that direction were acknowledged in Dr. Hooker's 'Flora of Tasmania.' In 1850 he was elected Fellow of the Society, and in 1854 Fellow of the Royal Society. He was Editor for some time of the 'Tasmanian Journal,' published under the auspices of the Royal Society of Tasmania. The number of papers attributed to him in the Royal Society's Catalogue of Scientific Papers is ten, two being elaborated in conjunction with Dr. J. E. Gray; but there were probably many other productions of his pen which have not been taken into account. His favourite pursuit was botany; but he devoted much time to the birds of Australia and the shells. He died March 14th, 1881.

**Samuel Gurney** was born at Ham in Essex in 1816, and was one of the well-known family of that name. His life was principally absorbed in commercial affairs; and for many years he was a principal partner in the discount house of Overend, Gurney, and Co., which, when converted into a limited liability company, failed in 1866, inflicting a heavy blow on the trade of the country. He was high Sheriff of Surrey in 1861, a Fellow of the Royal Geographical Society, and was elected into the Linnean Society 17th March, 1859; he died on 4th April last.

**George Curling Joad** died on 24th November last at his residence, Oakfield, Wimbledon Park. His garden was richly stocked with plants; and his herbarium of dried plants was of considerable extent. He was elected Fellow of the Society on January 19th, 1871; and was also a Member of the Scientific Committee of the Royal Horticultural Society.

**Richard Kippist** was born at Stoke Newington on June 11th, 1812. Whilst still a lad he entered the office of Mr. Joseph Woods, the architect, and author of a monograph on Roses and the still useful 'Tourist's Flora.' The taste for botany was either acquired whilst in the service of this gentleman, or else greatly fostered by him; for Mr. Kippist travelled with him, and afterwards helped to prepare the 'Tourist's Flora.' In 1830 Mr. Woods retired to Lewes; and Mr. Kippist, in February of that year, entered the service of the Linnean Society, then housed in Sir Joseph Banks's former residence in Soho Square. Under Prof. David Don, the then Librarian, Mr. Kippist had much to do with the distribution of Dr. Wallich's plants; and, on the death of the Librarian in 1842, he was chosen by the body of the Fellows his successor. In the April previous he had been elected an Associate; and he contributed at rare intervals some observations, chiefly on Australian plants, and also on the occurrence of spiral cells in the tests of Acanthaceous seeds. He was one of the earliest Members of the Microscopical Society, and also an Associate of the Royal Botanic Society, Regent's Park. He retired from his post of Librarian to the Society only last year; although for several years before his health, owing to asthmatic attacks, prevented his giving uninterrupted attention to his duties. The action of the Council in granting the full pension on his retirement met with the full approval of the Fellows; but he did not live long to enjoy his well-merited repose, for he died at Chelsea on Saturday, January 14th, 1882.

Mr. Kippist's long and faithful services of more than fifty years have already met with formal acknowledgment at the hands of the Fellows; but a few words in reiteration of the same will not be deemed out of place. No one could more thoroughly identify himself with the Society's interests than did our late Librarian; the welfare of the Society, its dignity, and importance were his first objects of regard. Precise and methodical almost to a fault, his scrupulous care and love of accuracy quite excused his seemingly rigid punctiliousness; and the news of his death called forth expressions of the sincerest regrets from all who remembered his lengthened and devoted services. He was buried at Brompton Cemetery on January 21st, the present Librarian, Dr. Murie, and the Assistant, Mr. James West, attending.

**Henry Reeks** was born at Standen near Hungerford, Berks, on March 15th, 1838. During the greater part of his life he lived at the Manor House, Thruxton, Andover, where he died on Monday, 20th February of the current year. Early in June 1866 he left England on an ornithological trip to Newfoundland; during it he met with severe frost-bite, and, surgical aid not being at hand, courageously amputated his own toes; he therefore remained partially crippled during the remainder of his life. Whilst on his sick-bed, he compiled a list of flowering-plants and ferns of Newfoundland, with meteorological observations, which was read before this Society December 2, 1869.

His remarks on the zoology of the same region were published in the 'Zoologist' of April 1869; also notes of rare eggs from North America. He likewise drew up a list of the flowering-plants, ferns, and mosses observed in the parish of East Woodhay, contributed towards the flora of the district, and published in the 'Report of the Newbury District Field Club' for 1870–71. He published notes on the Mammals of Shakespeare in the 'Zoologist' for 1878, the last paper known to the compiler. His death happened unexpectedly, after four days' illness, resulting, it is believed, from close attention to his wife, who was confined to her bed by quinsy. As an all-round naturalist, his loss was greatly deplored by those who knew and esteemed him.

**George Rolleston** was the son of a Yorkshire clergyman, and born at Maltby on July 30, 1829. He entered at Pembroke College, Oxford, after early private tuition, took a First Class in Classics in 1850, and was elected Fellow of his College in 1851. He studied medicine at St. Bartholomew's Hospital and served at Smyrna in the British Hospital there, but resumed his residence at Oxford on being appointed Lee's Reader in Anatomy at Christ Church. In 1860 he was appointed first Linacre Professor of Anatomy and Physiology, which he held to the time of his death. The work by which he is most widely known is his 'Forms of Animal Life,' issued from the Clarendon Press in 1870;

but his other numerous contributions to science were usually in the form of papers, our own Society being one of the media of publication. He spent the previous winter in the south of Europe in the hope of recruiting his health, enfeebled by incessant and unsparing exertion; but he returned in a sinking state to England only a few days before his death, which took place on June 16th, 1881, in his 52nd year. [For a fuller notice see Royal Society Proceedings, vol. xxxiii. (1882) pp. xxiv–xxvii.]

**David Rutherford** was born in Fifeshire in 1842; and up to 1871 was engaged in business as a bookseller in Edinburgh and London; but from an early period he was greatly attached to the study of natural history. In the year named (1871) he went out to the west coast of Africa as clerk to a trading firm. Two years later he gave up his situation and devoted his entire attention to entomology, at intervals sending home his collections. In 1875 he came home, with the best of his collections; but the vessel was wrecked and all his cases lost. After his return he was in the employ of a City firm till March 1879, when he again set out for the west coast. Collections were again received from him, but somewhat more scanty than during the first visit. His movements up to 1881 are not easily traced; but in March of that year he had found his way to the Baptist Mission Station of Rev. D. Fuller, from whom the account of his last days is derived. He went from this station up country, away from all white men; and at some two days' journey away he sickened, and died of dysentery at the age of 39. His body was brought down to the Missionary settlement and buried there. His collections safely reached England; but I am not aware if they were of great extent or value.

**Matthias Jacob Schleiden** was born on the 5th April 1804, at Hamburg, where he received his early education. In 1824 he betook himself to Heidelberg to study law, remaining there for three years. In 1833 he proceeded to Göttingen, to take up the study of medicine; and whilst there he attended Bartling's lectures on botany. Shortly after this, Schleiden went to his uncle, Professor Norkel, at Berlin, there to carry on his botanical studies by particularly devoting his attention to the anatomy and physiology of plants. From this period, namely 1837, Schleiden's activity in publication dated.

Two years later Schleiden was appointed Extraordinary Professor of Botany at Jena, at which place he busied himself with the preparation of his elaborated work 'Grundzüge der wissenschaftliche Botanik.' In 1843 the diploma of Doctor medicinæ honoris causa was accorded to him by the Medical Faculty of Tübingen; and in 1844 he was elected a Foreign Member of our Society. Having previously declined an invitation to fill the Chair of Botany at Giessen, he was appointed Director of the

Botanic Gardens at Jena in 1851, and in 1859 filled the office of Prorector Magnificus of the University.

For teaching-purposes he brought out his 'Grundriss der Botanik,' 'Handbuch der medicinisch-pharmaceutischen Botanik,' and 'Physiologie der Pflanzen und Thiere.' With Nägeli he started a 'Zeitschrift für wissenschaftliche Botanik,' of which, however, only four parts appeared. After this time his published works were almost entirely of a popular or else non-scientific character. In the year 1862 he abruptly resigned his Chair at Jena, and settled as a private individual at Dresden. The next year he was called to Dorpat as Professor of Botany, but gave up the post the following year. After this he again came forward as a popular writer, and, amongst other things, published two volumes of lyrics under the pseudonym of "Ernst." On his return from Dorpat he settled at Dresden; after that he moved to Wiesbaden, and finally to Frankfort-on-the-Main, where he died on the 23rd June last.

It is hardly necessary to remind the Fellows present of the great and lasting impulse given to vegetable physiology by the earlier works of Schleiden. His mistakes are forgotten; but the impulse forward which he gave when he promulgated his views on the life and functions of the cell, has not died out. For a full account of the influence Schleiden has exerted on the science, reference may be made to Sachs's 'Geschichte der Botanik,' pp. 202–210.

**Sir Charles Wyville Thomson** was born at Bonsyde, near Linlithgow, on the 5th March 1830. He went to school at Merchiston Castle Academy; and in 1845 he began his medical studies in the University of Edinburgh. He joined the Botanical Society there in 1847, and soon afterwards became Secretary of the Royal Physical Society. In 1850 he was appointed Lecturer on Botany in King's College, Aberdeen, and the year following Professor of Botany in Marischal College and University. In 1853 he was made Professor of Natural History in Queen's College, Cork, and in 1854 was transferred to the Chair of Mineralogy and Geology at Belfast.

Elected F.R.S. in 1867, he took part in the 'Porcupine' Expedition the next year, publishing his results in the volume entitled 'The Depths of the Sea.' On Prof. Allman resigning the Chair of Natural History at Edinburgh in 1870, Mr. Thomson was chosen his successor. In 1872 he was nominated chief of the scientific staff on board H.M.S. 'Challenger,' obliging him to be absent from Britain for upwards of three years. On his return he was Knighted, and received one of the Gold Medals of the Royal Society; and on his visit to Upsala he was created Knight of the Polar Star by the King of Sweden.

The long sea-voyage, however, had not invigorated him; but in 1879 his condition first caused alarm to his friends. In June of that year he was attacked by paralysis, and thenceforward only

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Stainton, H. T., nominated Auditor (1881), 12; Auditor (1882), 30; nom. Scrutineer, 5; presentation of Accounts by (1882), 31; relative to Treasurer's death, 2.

*Stephanotis*-roots infested with *Leptodera* (Cobbold), 23.
Stephens, H. C., elected, 35.
Stephens, H. G. W., elected, 35.
Stewart, C., generative organs of *Helix hæmastoma*, 13; *Monas termo*, 27; ovule of *Crocus*, 27.
Stipules of *Ilicineæ* (Christie), 6.
Stone, J. H., *Lychnis Viscaria* shown, 23.
*Strongylus Douglasii* (Cobbold), 23.
*Strychnos* from West Africa shown (Holmes), 13.
Stubbs, S., elected, 11.
Sturges, T. R. H., elected, 23.
Suche, G., deceased, 13.
Sugar-cane, new varieties (Villa Franca and Glass), 30.
Sur-anal plate (Bell), 8.
Sussex, some Australian fungi a pest in (Smith), 28.
Swanage, monstrous *Carex* from (Ridley), 31.
Swinhoe, Lt.-Col., elected, 23.
Sydney, *Vallisneria* from (Ralph), 34.
Syrian figs shown (Castro), 5.

*Tabernæmontana crassa* shown (Christy), 19.
*Temnopleuridæ* (Duncan), 24.
Tepper, J. G. O., animal intelligence, 26; medicinal use of *Melaleuca uncinata*, 26; *Papilionidæ* of S. Australia, 2.
*Teredo utriculus* (Hanley), 36.
Tetraspores of *Helminthora* (Holmes), 1.
Thames, *Noctiluca* obtained from (Brook), 4.
Thomas, A. P., elected, 28.
Thomas, O., new *Insectivora* from Madagascar, 28.
Thomson, A., presentation of St. G. J. Mivart's portrait, 15.
Thomson, Sir C. W., com. by, 4; death reported, 31; obituary, 67.
Tinder from *Hermas gigantea* (Angas), 1.
Townsend, F., *Erythræa* new to England, 4.
Traill, G. M., algæ collected by, shown (Holmes), 8.
Transylvania, *Ascaris transfuga* from (Cobbold), 27.
Treasurer's report (1881), 13.
— statement (1881), 14; (1882), 32.
Trematode from horse (Cobbold), 1.
Trichophora and antheridia in *Callithamnion* (Holmes), 1.
Trout, British (Day), 28.
Tunicata, British (Herdman), 4.
Turner, J., elected, 35.
Tusks incrusted with ova (Garston), 10.
Tyler, C., nom. Scrutineer (1882), 33.

*Urostigma Vogelii*, shown (Christy), 19.

*Vallisneria* from Australia (Ralph), 34.
Variation in Ascidians (Herdman), 12.
Vegetable-fibre extraction, Ekman's process of (Christy), 25.
Vegetables, reparative processes (Shattock), 8.
*Verbascum nigrum*, proliferous (Henslow), 2.
Veitch, A., deceased, 13.
Verde variety of *C. Calisaya* shown (Holmes), 26.
Vertebrata, recent works on, 56.
*Vibrissea* (Phillips), 6.
Villa-Franca, sugar-cane varieties, 30.
Vipan, C., elected, 27.

Walker, A., elected, 10.
Wallflowers, monstrous (Henslow), 34, (Fookes) 35.
Walton, G. S., elected, 23.
Ward, H. M., coffee-leaf disease, 34.
Wasps, Bees, and Ants (Lubbock), VIII. 20, IX. 23.
Watson, R. B., Mollusca of 'Challenger,' VII. 4, VIII. 8, IX. 12, X. 20, XI. & XII. 22, XIII. 28, XIV. 29, XV. 36.
Watt, G., flora of N.W. India, 2; Indian species of *Primula*, 10; do. *Androsace*, 13.
Webb, E. A., proliferous *Rubus*, 2.
Weir, J., nominated Scrutineer (1881), 16.
West, W., new British moss gathered by (Holmes), 8.
West Indies, *Cordiceps* from (Smith), 28.
Weymouth, new British algæ from (Holmes), 1.
White, C. F., drawings of pollen shown, 27.
Whitemere, breaking of (Phillips), 29.
Wickham, W., Arctic plants shown by, 7.
Wilkinson, C. S., elected, 23.
Wills, G. S. V., elected, 23.
Wilmersdorffer, wood-sections by, 28.
Wilson, A., elected, 10.
Wilson, A. S., potato-disease, 27.
Wilson, G., elected, 23.
Wilson, J. B., elected, 28.
*Wolffia arrhiza* found in Ceylon (Ferguson), 20.
Wood-sections by Wilmersdorffer shown, 28.
Woods, sections shown (Murray), 6.
Woollcombe, W. G., elected, 8.
Worms, new method of preserving, shown, 6.
Wright, J. T., elected, 20.
Würth, L., preparations by, shown, 6.

York, loan exhibition by British Assoc. at, 20.

Zagazig, trematode found at (Cobbold), 1.
Zanzibar, rubber-plant from (Kirk), 35.
Zoëa crustaceans devoured by pilchards (Day), 22.
Zonate tetraspores of *Helminthora* (Holmes), 1.
Zooglœa stage of *Monas termo* (Stewart), 27.
Zoophytes, British, shown (Gould), 6.
Zoology, report on (1881–82), 52.

# NOTICE.

The Proceedings of the Linnean Society have been resumed in compliance with a very generally expressed wish on the part of the Fellows that there should be an official record of the business done at each Meeting. The present issue contains the Proceedings for the two Sessions from November 1880 to June 1882; likewise the Obituary Notices for two years, and the Anniversary Address of the President for 1882.

Volume I. of the Proceedings, containing short papers, abstracts of others, Anniversary Meetings, and Obituary Notices, between November 1838 and June 1848, was issued in 37 Numbers at intervals, and completed with Index and Contents in 1849.

Vol. II., from November 1848 to June 1855, with similar contents, in like manner was issued in 29 Numbers at intervals, and completed with Index in 1855.

From November 1855 till Session 1871–1872 the Proceedings of each Session complete in itself with Index was separately issued, and paged and numbered accordingly without distinction of volume—the same being inserted in the Journals, and so distributed.

During the three subsequent years, viz. Sessions 1872–73, 1873–74, 1874–75, the Proceedings were issued separate from the Journals, and sent out annually.

The issue of the Proceedings was then suspended for an interval, but again resumed, as above mentioned.

A part in a wrapper, containing the Proceedings of the five Sessions from November 1875 to June 1880 inclusive, with Index, was issued and distributed in July 1882. The Obituary Notices were omitted, none having been prepared for publication during that time; but where practicable references were supplied in the

Sept. 3. 1884

OCTOBER 1883.] [Price 3s.

# PROCEEDINGS

OF THE

# LINNEAN SOCIETY OF LONDON.

FROM NOVEMBER 1882 TO JUNE 1883.

Sw. LONDON:

# PROCEEDINGS

OF THE

# LINNEAN SOCIETY OF LONDON.

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## (SESSION 1882–83.)

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### November 2nd, 1882.

Sir JOHN LUBBOCK, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Prof. J. C. Ewart, George Fry, Esq., and Thomas de Grey Lord Walsingham were elected Fellows.

Mr. A. P. W. Thomas exhibited preparations showing the life-history of the Liver-fluke (*Fasciola hepatica*), the embryos as free cercariæ burrowing into and developing in the body of *Limnæa truncatula*.

Mr. W. T. Thiselton Dyer exhibited the plant producing "*Cassia lignea*," and the implements used in its preparation in Southern China.

Mr. C. T. Druery showed seedling proliferous forms of *Athyrium Filix-fœmina*.

Mr. F. Crisp showed preparations sent by Drs. Lœw and Bokorny, of Munich, to illustrate the claimed discovery of a specific chemical difference between dead and living protoplasm.

Prof. E. Ray Lankester exhibited marine organisms dredged by him off the coast of Norway, including a branch of *Paragorgia arborea* three feet across.

Mr. T. Christy exhibited a living specimen of the Japanese Peppermint plant, which yields the Menthol of commerce; botanically it was not found to differ from *Mentha arvensis*.

Dr. F. Day showed specimens of American Brook-Trout, and a hybrid between the American and common Trout, in illustration of his paper.

Mr. J. G. Baker exhibited *Lycopodium complanatum* from the Kew Herbarium, collected by Prof. Lawson, confirmatory of Mr. Druce's remarks in the current number of the 'Journal of Botany.'

The following papers were read:—

1. "Observations on Ants, Bees, and Wasps."—Part X. By Sir John Lubbock, Bart., F.R.S., Pres.L.S.
2. "Notes on certain Plants of North-western Queensland, possessing valuable Medicinal Properties." By W. A. Armit, F.L.S.
3. "Remarkable Malformation of the Leaves of *Beyeria opaca*, F. v. Muell., var. *linearis*." By J. G. Otto Tepper, F.L.S.
4. "Hybridization and Alteration in the External Characters of *Salmo fontinalis* introduced into this Country." By Dr. Francis Day, F.L.S.
5. "Teratological Notes on Plants." By Henry N. Ridley, F.L.S.

## November 16th, 1882.

**Frank Crisp**, LL.B., Treas. and Vice-President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

O. T. Olsen, Esq., and J. Neeson Stone, Esq., were elected Fellows.

A specimen of fasciated Asparagus was exhibited for the Rev. Richard Hooper.

Dr. W. C. Ondaatje exhibited some Ceylon plants, the fruit of *Randia dumetorum* used as a remedy in dysentery, the leaves of *Sethia acuminata* as anthelmintic, and a black varnish obtained from *Temecarpus Gardneri*.

Mr. W. T. Thiselton Dyer showed a cone of *Cycas Beddomei*, a new species from Southern India.

Mr. F. P. Balkwill exhibited a specially mounted series of British Foraminifera under the microscope.

Mr. J. Hanbury showed a large fungus grown in a city wharf-cellar, considered to be a species of *Lentinus* by Mr. G. Murray.

Mr. C. Stewart exhibited specimens of *Pilobolus*, and a saucer covered with its projected sporangia.

The following papers were read:—
1. "Contributions to the Flora of Madagascar.—I. Polypetalæ." By J. G. Baker, F.R.S., F.L.S.
2. "The Passifloreæ of Ecuador and New Granada collected by M. Edouard André." By Dr. Maxwell T. Masters, F.R.S., F.L.S.
3. "Note on the Type Specimen of Finsch's Fruit-Pigeon." By E. P. Ramsay, F.L.S.
4. "On Cerebral Homologies in Vertebrates and Invertebrates." By Prof. R. Owen, C.B., F.R.S., F.L.S.
5. "Note on the Origin of '*Cassia lignea*.'" By W. T. Thiselton Dyer, F.R.S., F.L.S.
6. "The Mollusca of the 'Challenger' Expedition."—Part XVI. By the Rev. R. Boog Watson, F.L.S.

December 7th, 1882.

Sir JOHN LUBBOCK, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

The Rev. Richard Baron, Frederick Orpen Bowers, Esq., Thomas Hughes Corry, Esq., Oscar Louis Fraser, Esq., David Houston, Esq., Alfred William Howitt, Esq., H. Tattersall Knowles Kempton, Esq., Hugh McCallum, Esq., Edward Augustus Petherick, Esq., Sloman Rous, Esq., and Henry Charles Stone, Esq., were elected Fellows.

The Rev. A. P. Murray showed *Althæa hirsuta*, *Vicia Orobus*, and *Phlomis fruticosa* collected by him in Somersetshire. He also gave an instance of cleistogamic flowers of *Hoya carnosa* producing fertile seed.

Mr. W. T. Thiselton Dyer showed maps to display the progress of the *Phylloxera* in Spain and Portugal. He also exhibited photographs of Cinchona-culture in Ceylon.

Mr. W. P. Espeut exhibited Kola-nuts, stated to have sobering effects after spirituous intoxication.

The following papers were read:—
1. "Notes on some little-known Collembola, and on the British Species of the Genus *Tomocerus*." By George Brook, F.L.S.
2. "Discovery of Tasmanian Plants near Adelaide, South Australia." By J. G. Otto Tepper, F.L.S.
3. "On a Collection of Exotic Lichens made by the late Dr. A. C. Maingay in Eastern Asia." By Dr. W. Nylander and Rev. J. M. Crombie, F.L.S.
4. "Remarks on the Genera of the Subfamily Chalcidinæ, with Synonymic Notes and Descriptions of new Species of Leucospi-

dinæ and Chalcidinæ." By W. F. Kirby. (Communicated b Dr. Günther, F.R.S., F.L.S.)

## December 21st, 1882.

ALFRED W. BENNETT, Esq., in the Chair.

The Minutes of the last Meeting were read and confirmed.

Prof. Adolphus Ernst and Dr. William Charles Oudaatje were elected Fellows.

Mr. Christy made some remarks upon the effects of the Kola-nut in clearing fermented liquors.

Dr. T. Spencer Cobbold exhibited specimens of *Ligula abdominalis* from the Bream, *L. leucisci* from the Minnow, and *L. monogramma* from the Grebe, for comparison with the human *L. Mansoni.*

The following papers were read:—

1. "On the Development of the Pollinium of *Asclepias Cornuti*, Decaisne." By Thomas H. Corry, F.L.S.
2. "Observations on the Marine Fauna of the East Coast of Scotland (with Notes on Sponges and Bryozoa by S. O. Ridley, F.L.S.; and on the Echinoderms, by F. J. Bell)." By Dr. Francis Day, F.L.S.
3. Contributions to the Flora of Madagascar.—II. Gamopetalæ." By J. G. Baker, F.R.S., F.L.S.
4. "Recent Additions to our Knowledge of the Flora of Fiji." By J. G. Baker, F.R.S., F.L.S.
5. "Description of *Ligula Mansoni*, a new Human Cestode." By Prof. T. Spencer Cobbold, F.R.S., F.L.S.
6. "Additions to the Lichens of the 'Challenger' Expedition." By the Rev. J. M. Crombie, F.L.S.

## January 18th, 1883.

Sir JOHN LUBBOCK, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Edward Arthur Lionel Batters, Esq., Alfred Joe Burrows, Esq., Edgar Franklin Cooper, Esq., Prof. James Allen Harker, and George Lewis, Esq., were elected Fellows.

Mr. H. Groves showed a specimen of *Ranunculus ophioglossifolius* obtained in Hampshire, and new to Britain.

A living specimen of *Pieris rapæ* was exhibited on behalf of Mr. James Romanis; it had been found fluttering in the window of his house a few days previously.

The following papers were read:—

1. "On the Fall of Branchlets in the Aspen (*Populus tremula*)." By Samuel G. Shattock. (Communicated by Sir James Paget, Bart., F.R.S., F.L.S.)

2. "On certain Points in the Anatomy of *Polynoina*, and on *Polynoë clava*, Montagu." By Alfred W. Bourne. (Communicated by Prof. E. Ray Lankester, F.R.S., F.L.S.)

3. "On the Internal Hard Parts of the Fungidæ.—I." By Prof. P. M. Duncan, F.R.S., F.L.S.

### February 1st, 1883.

Sir John Lubbock, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Frederick William Burbidge, Esq., and Joseph Johnson, Esq., were elected Fellows.

Dr. W. C. Ondaatje exhibited a peculiar Red Coral found by him in Ceylon.

Mr. W. T. Thiselton Dyer showed a model of the fruit of the Double Cocoa-nut, *Lodoicea seychellarum*, Lab.

Microscopic sections of English Coal were shown for Mr. J. Norman.

The following papers were read:—

1. "On the Structure, Development, and Life-history of a Tropical Epiphyllous Lichen." By H. Marshall Ward. (Communicated by W. T. Thiselton Dyer, F.R.S., F.L.S.)

2. "On the Pairing of *Tegenaria Guyonii*, and Description of certain Organs in the Male Abdominal Sexual Region." By F. Maule Campbell, F.L.S.

### February 15th, 1883.

Sir John Lubbock, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Mr. J. Jenner Weir exhibited a perfect hermaphrodite *Lycæna Icarus*, with a blue male and brown female of the same species for comparison. The hermaphrodite possessed two spotless blue wings on the left and two spotted brown wings on the right, thus being intermediate in colour between the two sexes.

Dr. W. C. Ondaatje exhibited a collection of thirty Ceylon Corals.

Mr. T. Christy exhibited Carnauba Palm-leaves with wax *in situ*; also a supposed hybrid of *Primula japonica* and *P. sinensis* with double whorls of flowers.

The following papers were read:—

1. "Contributions to the Flora of Madagascar.—III. Incompletæ and Monocotyledons." By J. G. Baker, F.R.S. F.L.S.

2. "On the Outer Peridium of *Broomeia*." By George Murray, F.L.S.

3. "The 'Manna' or Lerp Insect." By J. G. Otto Tepper, F.L.S.

4. "On the Synonymy of *Didymoplexis*, Griffith, and the Elongation of the Pedicel after flowering in *D. pallens*." By W. B. Hemsley, A.L.S.

## March 1st, 1883.

Sir JOHN LUBBOCK, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

William Bowles Barrett, Esq., Lewis Jones Knight Brace, Esq., John Brooks Bridgman, Esq., William Oldham Chambers, Esq., William Eagle Clarke, Esq., Wilfred Golden, Esq., Dr. Francis Henry Hill Guillemard, James Cory Havers, Esq., Dr. Thomas Morland Hocken, Rev. Charles Henry Middleton-Wake, James Stirling, Esq., and Rev. Paul Williams Wyatt were elected Fellows.

Two pieces of Yellow Pine from Quebec were exhibited on behalf of Mr. R. Morton Middleton, damaged by supposed insect-perforation.

Mr. W. T. Thiselton Dyer showed leaves and fruit of Oranges from the Bahamas infested with a scale insect (*Mytilaspis citricola*, Packard).

Mr. R. F. Towndrow exhibited a new variety of *Rosa stylosa* from Madresfield, near Malvern, obtained by Mr. A. D. Mellin, it being evergreen and ripening fruit in the second year.

The following papers were read:—

1. "On the Constancy of Insects in their Visits to Flowers." By A. W. Bennett, F.L.S.

2. "On the Methodic Habits of Insects when visiting Flowers." By R. M. Christy. (Communicated by A. W. Bennett, F.L.S.)

3. "Observations on Living Echinoderms." By G. J. Romanes, F.R.S., Sec. L.S.

4. "Mollusca of H.M.S. 'Challenger' Expedition."—Part XVII. Pyramidellidæ. By the Rev. R. Boog Watson, F.L.S.

### March 15th, 1883.

FRANK CRISP, LL.B., Treas. and Vice-President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

The following papers were read:—

1. "On *Simondsia paradoxa*, and its probable Affinity with *Sphærularia bombi*." By Dr. T. Spencer Cobbold, F.R.S., F.L.S.
2. "On the Moths of the Family Urapterygidæ in the British Museum." By A. G. Butler, F.L.S.
3. "On the Mollusca of H.M.S. 'Challenger' Expedition."—Part XVIII. By the Rev. R. Boog Watson, F.L.S.

### April 5th, 1883.

Sir JOHN KIRK, K.C.M.G., Vice-President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Richard Manliffe Barrington, Esq., George Edward Comerford-Casey, Esq., Frederick Victor Dickins, Esq., and Edward Cambridge Phillips, Esq., were elected Fellows.

Mr. E. M. Holmes exhibited Birch-tree sap which had exuded from a cut branch 1 inch in diameter at the rate of 4 oz. per hour during the night and double during the day, before the expansion of the leaf-buds. The sap had been analyzed by Dr. Attfield and recorded in the 'Pharmaceutical Journal.'

Wood from the pier-piles of West Hartlepool was exhibited on behalf of Mr. R. Morton Middleton, displaying the ravages of *Limnoria lignorum*.

The following papers were read:—

1. "The India-rubber Tree, *Landolphia owariensis*, of the Gold Coast." By Alfred Moloney, Esq. (Communicated by B. Daydon Jackson, Sec. L.S.)
2. "On a new Species of Infusorian of, or allied to, the genus *Gerda*. By F. W. Phillips, F.L.S.
3. "On the Genus *Hemicarex* and its Allies." By Charles Baron Clarke, F.R.S., F.L.S.

### April 19th, 1883.

Sir JOHN LUBBOCK, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Frederick Howard Collins, Esq., Thomas Walker Coffin, Esq., Charles De Laune Faunce De Laune, Esq., Daniel Morris, Esq., J. Jardine Murray, Esq., and the Hon. John Bates Thurston, C.M.G., were elected Fellows.

The President announced that the following Auditors for the examination of the Treasurer's Accounts had been nominated by the Council:—

For the Fellows, Dr. John Millar and Mr. F. Maule Campbell; for the Council, Mr. A. W. Bennett and Mr. R. W. McLachlan; and, by show of hands, these were unanimously elected.

Mr. J. Britten exhibited specimens of *Arum italicum* from Torquay; also *A. maculatum*, for comparison.

Mr. G. F. Angas showed vegetable produce from Dominica.

Mr. F. V. Dickins exhibited a Japanese work issued by the University of Tokio, descriptive of plants grown in the Botanic Garden of Koishikawa.

The following papers were read:—

1. "On the Sense of Color amongst some of the Lower Animals." By Sir John Lubbock, Bart., Pres. L.S.
2. "On the Diatoms collected during the Arctic Expedition of Sir George Nares." By Prof. T. Cleve. (Communicated by Sir J. D. Hooker, F.R.S., F.L.S.)
3. "Monograph of the Ephemeridæ or Mayflies." By Rev. A. E. Eaton. (Communicated by Sir John Lubbock, Bart., Pres. L.S.)
4. "On the Joint and Separate Work of the Authors of Bentham and Hooker's 'Genera Plantarum.'" By George Bentham, F.R.S., F.L.S.

## May 3rd, 1883.

Sir John Lubbock, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Signor Odoardo Beccari and Prof. Johan Lange were elected Foreign Members.

Colonel Beddome exhibited *Asplenium resectum*, Sm., with allantodioid sori, and *Diplazium travancoricum*, a new species.

Mr. J. E. Howard showed living and dried plants and barks in illustration of his paper. Mr. T. Christy also exhibited Bolivian Cinchona barks.

The following papers were read:—

1. "On *Cinchona Calisaya*, var. *Ledgeriana*, Howard, and *C. Ledgeriana*, Moens." By J. Eliot Howard, F.R.S., F.L.S.

2. "On the Asteroidea of the 'Challenger' Expedition."—Part II. By W. Percy Sladen, F.L.S.

3. "On a new Species of *Cycas* from Southern India." By W. T. Thiselton Dyer, F.R.S., F.L.S.

4. "Revision of the Genus *Entomobrya* (=*Degeeria*)." By G. Brook, F.L.S.

5. "Mollusca of the 'Challenger' Expedition."—Part XIX. By the Rev. R. Boog Watson, F.L.S.

## May 24th, 1883.

### *Anniversary Meeting.*

Sir JOHN LUBBOCK, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Mr. R. McLachlan, on the part of the Audit Committee, read the Annual Receipts and Payments as follows (see p. 11).

The Treasurer, Mr. Frank Crisp, then submitted a detailed explanation of the various items in the foregoing statement.

The Secretary then read his Report of the deaths, withdrawals, and elections of new Fellows for the past year as follows:—

Since the last Anniversary 11 Fellows have died, or their deaths been ascertained, viz.:—

FELLOWS (11).

Prof. F. M. Balfour.
Prof. G. Dickie.
W. A. Forbes.
Rev. J. S. Copley Greene.
G. S. Gibson.
R. Hudson.
Dr. W. Jameson.
J. D. Llewelyn.
M. Moggridge.
General H. Y. D. Scott.
Dr. G. H. K. Thwaites.

FOREIGN MEMBER (1).

Dr. W. C. H. Peters.

During the year 11 Fellows had withdrawn, viz.:—

E. Adams.
J. Armstrong.
Prof. T. W. Bridge.
Sir Victor Brooke, Bart.
Rev. J. E. Leefe.
Prof. A. Liversidge.
Capt. G. P. Moore.
W. G. Piper.
Dr. G. Sigerson.
J. B. Spence.
T. Charters White.

And 54 Fellows and 2 Foreign Members had been elected.

During the past year there had been received as Donations to the Library 104 volumes and 207 pamphlets and separate impressions of memoirs. From the various scientific Societies there had also been received 142 volumes and 118 detached parts; besides 25 volumes obtained by exchange and donation from the Editors of independent periodicals. The Council, at the recommendation of the Library Committee, had sanctioned the purchase of 136 separate volumes and 54 parts of important works. The total additions to the Library were therefore 407 volumes and 379 separate parts.

The Secretary, on behalf of the President, having read the Bye-Laws governing the elections—

The President then opened the business of the day, and the Fellows present proceeded to ballot for the Council and Officers.

The Ballot for the Council having closed, the President appointed Dr. Braithwaite, Mr. G. Busk, and Prof. Allen Thomson as Scrutineers. The votes having been counted and reported to the President, he declared the following Members to be removed from the Council, viz.:—

Mr. H. W. Bates, Mr. G. Busk, Mr. C. B. Clarke, Sir John Kirk, and Mr. R. McLachlan.

And the following to be elected into the Council, viz.:—

Mr. T. Christy, Mr. H. E. Dresser, Mr. G. R. M. Murray, Mr. H. Saunders, and Mr. H. T. Stainton.

The Ballot for the Officers also having closed, the President nominated the same Scrutineers. The votes having been counted and reported to the President, he declared the result as follows, viz.:—*President*, Sir John Lubbock, Bart.; *Treasurer*, Mr. Frank Crisp; *Secretaries*, Mr. B. Daydon Jackson and Mr. G. J. Romanes.

The President then delivered his Address (see p. 14), followed by Reports on the various botanical and zoological publications during the previous twelvemonth.

Prof. Allen Thomson then proposed the following resolution, viz.:—"That the thanks of the Society be given to the President for his excellent Address, and that he be requested to allow it to be printed."

This having been seconded by Mr. W. Carruthers, was carried unanimously.

## *Receipts and Payments of the Linnean Society from May* 1, 1882, *to April* 30, 1883.

| *Receipts.* | | | | £ | s. | d. |
|---|---|---|---|---|---|---|
| Balance at Bankers on 1st May, 1882 | | | | 649 | 2 | 5 |
| Interest on Investments | | | | 134 | 11 | 9 |
| Admission Fees | | | | 300 | 0 | 0 |
| Annual Contributions | | | | 1078 | 8 | 2 |
| Compositions | | | | 600 | 1 | 0 |
| Sales of Publications:— | | | | | | |
| Transactions | £143 | 5 | 3 | | | |
| Journal | 111 | 9 | 7 | | | |
| Proceedings and Catalogues | 2 | 8 | 0 | | | |
| | | | | 257 | 2 | 10 |
| Donations | | | | 64 | 2 | 3 |
| | | | | £3083 | 8 | 5 |

| *Payments.* | | | | £ | s. | d. |
|---|---|---|---|---|---|---|
| Taxes and Insurance | | | | 16 | 13 | 9 |
| Repairs and Furniture | | | | 15 | 0 | 8 |
| Coals and Gas | | | | 66 | 2 | 2 |
| Salaries and Commission | | | | 351 | 10 | 0 |
| Library:— | | | | | | |
| Books | £163 | 12 | 6 | | | |
| Binding | 94 | 15 | 9 | | | |
| | | | | 258 | 8 | 3 |
| Expenses of Publications:— | | | | | | |
| Printing | £581 | 11 | 2 | | | |
| Illustrations | 373 | 4 | 7 | | | |
| Distribution | 64 | 15 | 9 | | | |
| | | | | 1019 | 11 | 6 |
| Miscellaneous Printing and Stationery | | | | 35 | 2 | 5 |
| Petty expenses (including Tea and Postage) | | | | 56 | 11 | 1 |
| Investment of Compositions | | | | 750 | 0 | 0 |
| Balance at Bankers on 30th April, 1883 | | | | 514 | 8 | 7 |
| | | | | £3083 | 8 | 5 |

FRANK CRISP, *Treasurer.*

The foregoing Accounts have been examined and found correct.

F. M. CAMPBELL,
R. McLACHLAN,
A. W. BENNETT.
JOHN MILLAR. } *Auditors.*

May 22, 1883.

The following Resolution was read from the Chair:—

"The Fellows of the Linnean Society assembled in their Anniversary Meeting desire to congratulate Mr. Bentham and Sir Joseph Hooker on the completion of the great work on which during more than twenty years they have been engaged, and to express their sense of the immense value of the 'Genera Plantarum' as a philosophic and exhaustive exposition of the known forms of flowering plants."

This Resolution having been spoken to by Mr. Carruthers, was carried unanimously.

### June 7th, 1883.

Sir JOHN LUBBOCK, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Letters from Mr. Bentham and Sir Joseph Hooker in acknowledgment of the Resolution passed at the Anniversary Meeting on the completion of their 'Genera Plantarum' were read and laid on the table.

The President nominated Sir Joseph Hooker, Prof. Duncan, Mr. Crisp, and Mr. H. T. Stainton as Vice-Presidents for the ensuing Session.

Robert Ingham Clark, Esq., and Frank Matthews, Esq., were elected Fellows.

Mr. W. T. Thiselton Dyer showed a series of Copals, some from Inhambane, stated to be the product of *Copaifera Gorskiana*; others from Lagos, obtained by Capt. Moloney, supposed to be derived from a species of *Daniellia*, the native name being "Ogea."

Mr. P. Hiern exhibited *Quercus Ilex*, var. *Fordii*, from Barnstaple, to show the alterations in the foliage produced after pruning.

Mr. Stansfield R. Rake showed a Burdock-leaf with pitcher-shaped excrescences, supposed to be the result of insect depredation.

Mr. George Murray exhibited a specimen of Dace killed by *Saprolegnia ferax*, the result of inoculation, said to be the first recorded experimental proof of the communicability of the disease.

Dr. Cobbold exhibited Shrimps sent by Dr. Burge, of Shanghae, containing immature Flukes, suggested as being the larval state of one or other of the three species of human fluke known to

The following papers were read:—

1. "On new and rare Monocotyledonous Plants from Madagascar." By Henry N. Ridley, F.L.S.
2. "On some Japan Brenthidæ, and Notes of their Habits." By George Lewis, F.L.S.,
3. "On the Development and Fertilization of *Asclepias Cornuti*." By Thomas H. Corry, F.L.S.
4. "On the Habits of the Termites of Rangoon." By Dr Robert Romanis, F.L.S.

## June 21st, 1883.

Prof. P. Martin Duncan F.R.S., Vice-Pres., in the Chair.

The Minutes of the last Meeting were read and confirmed.

Edmund J. Baillie, Esq., John Borland, Esq., Kenneth M^cKean, Esq., Edward C. Malan, Esq., and Dr. Henry A. A. Nicholls were elected Fellows.

A specimen of *Polyporus sulphureus* was shown on behalf of the Rev. A. A. Harland; it was obtained from the stem of a yew tree in the Cliveden woods, Bucks, 15th June, 1883.

Dr. C. E. Barnard showed a series of fossil fruits from Australia.

Mr. W. T. Thiselton Dyer exhibited wax extracted by Mr. D. Morris from *Myrica microcarpa*. He also showed grey camphor from *Artemisia Moxa*, believed to be an ingredient in the Indian Ink for the production of its characteristic odour; also a rosary made of the fruits of *Trapa verbanensis*, De Not. Lastly, wax and candles from *Rhus vernicifera* of Japan, an industry now said to be dying out on account of the rivalry of American rock-oils.

*Arnoseris pusilla* and *Hypochœris glabra*, from Send, near Guildford, were shown by Mr. T. Howse.

Specimens of the Cheddar Pink (*Dianthus cæsius*), grown by Mr. C. F. White on his garden-wall, were shown.

The following papers were read:—

1. "On the Structure of the Hard Parts of the Fungidæ.—Part II. Lophoserinæ." By Prof. P. M. Martin Duncan, F.R.S., V.P.L.S.
2. "On the Selagineæ described by Linnæus, Bergius, Linnæus fil., and Thunberg." By R. A. Rolfe. (Communicated by Prof. Oliver, F.R.S., F.L.S.)
3. "On the Malleus of *Rhytina Stelleri*." By Alban H. G. Doran. (Communicated by Prof W. H. Flower, F.R.S., F.L.S.)
4. "Notes on some new Economic Products recently received

at the Royal Gardens, Kew." By W. T. Thiselton Dyer, F.R.S., F.L.S.

5. "On the Testis of *Limulus*." By W. B. S. Benham. (Communicated by Prof. E. Ray Lankester, F.R.S., F.L.S.)

6. "On the Mollusca of the 'Challenger' Expedition."—Part XX. By the Rev. R. Boog Watson, F.L.S.

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## ANNIVERSARY ADDRESS OF THE PRESIDENT.

GENTLEMEN,—

IF we have no very striking event to record in commemoration of the year which has just elapsed, nor any single discovery which stands out above all others, we may nevertheless fairly say that it is one in which Biology has made considerable advance, and which as regards our Society in particular has been one of progress and prosperity.

With reference to finance, I think we may fairly congratulate ourselves on the report which has just been read by our Treasurer. We have been able to invest something more than the amount of the composition fees, besides spending a fair amount on the improvement of the Library, the increase in our funds amounting to something over £600.

Indeed, since the removal into the present apartments, the Society has considerably improved its financial position, and the investments now reach nearly £5000.

It is to be borne in mind that the actual property of the Society hitherto has not figured in the Treasurer's annual statements. Mr. Jackson and Dr. Murie consider that, as a rough estimate, Linnæus's Library and collections may be taken, say, at £5000; the Society's Library, say £15,000; stock of unsold publications, £3000; Portraits, Busts, and other Furniture, £2000; which, together with present investments, gives a total of, say, £30,000.

We may also congratulate ourselves that 54 Fellows have joined the Society during the past year, which is about 25 per cent. increase on the average of former years.

The deaths have not been altogether high; but unfortunately the withdrawals have been more numerous. A curious fact, however, is that some of those elected since last Anniversary were formerly Fellows of the Society; so that we may hope that some of those who have lately resigned may later on join the Society again.

The deaths and withdrawals together, nevertheless, amount only to 24, so that the total number of Fellows shows a marked increase.

As might be anticipated, the great bulk of our Fellows are residents in Great Britain and Ireland. In our Foreign List, India from early times has held a good place; the old East-India Company's service always contained many naturalists of distinguished eminence. Within later years the number of Colonial Fellows has steadily increased. Thanks greatly to the untiring zeal of that indefatigable worker in Botany, Baron von Mueller, Australia and Tasmania come well to the front, even though, or rather perhaps even because, Sydney, mainly through Mr. W. J. Mac Leay's exertions, has a Linnean Society of its own.

New Zealand is well represented also. This is the case not only in mere numbers, but it may be said also in representative investigators in Botany and Zoology and the kindred palæontological subjects. It is to be regretted that we have but few members in South Africa, or in Canada, which I mention last in order to express the hope that the approaching visit of the British Association to that great Dominion may bring it into closer association with our Society.

It is indeed very gratifying to watch the progress of Science in our Colonies.

New Zealand is to be congratulated on the successful leadership of Dr. Hector, who, besides his Geological Reports and many separate works of the Colonial Museum, has also edited the important series of Transactions of the New-Zealand Institute.

In Australia, I may mention the Journal of the Royal Society, and the now extensive series of the Proceedings of the Linnean Society of New South Wales.

Besides Baron von Mueller's numerous botanical publications, McCoy, with Dr. P. H. Macgillivray's assistance, in the 'Prodromus of the Zoology of Victoria' is doing most useful labour towards elucidating the Natural History of Victoria. South Australia also shows signs of activity, through the exertions of, among others, our own members J. G. Otto Tepper and Professor Tate.

During the past year there have been received as Donations to our Library 104 volumes and 207 pamphlets and separate impressions of memoirs. From the various Scientific Societies there have also been received 142 volumes and 118 detached parts; besides 25 volumes obtained by exchange and donation from the editors of independent periodicals. The Council, at the recommendation of the Library Committee, has sanctioned the purchase of 136 separate volumes and 54 parts of important works. The total additions to the Library were therefore 407 volumes and 379 separate parts. It will thus be seen that, compared with former years, both in donations and purchase there has been actual increase in additions to the Library.

Nine hundred and eighteen volumes and parts have been bound during the year; and the Council has also made a special grant for the rebinding of certain of the volumes in Linnæus's own

Library, as well as manuscripts and correspondence already mentioned.

I may take this opportunity of mentioning that Fellows can do a real service, in offering to the Society odd volumes, or, it may be, separate papers. If Fellows whose Libraries contain good series of works or papers on special subjects would, as opportunity occurs, offer any duplicate or odd pamphlet or book to the Library, they would in many cases confer a lasting benefit on our successors.

During the past year the Council has sanctioned and Dr. Murie has carried out a useful piece of work, namely revision of the stock of publications.

This proved more arduous than anticipated, as may best be understood in the following quotation from the Librarian's Report presented to the Council:—"Only after beginning did it become apparent that the reputed contents of the parcels were in hopeless confusion; and unless the errors were removed from the beginning, there would be no end to the trouble. 3573 parcels had to be carried up and down stairs, or backwards and forwards—all undone and remade up and corded; of loose sheets alone, 16,666 had to be separately counted. Each parcel as above had to be separately labelled; and each label on the average contains at least 6 to 8 letters and figures. As the stock now stands, every item is capable of inspection at a moment's notice." From the state of the old stock list, it was at first supposed that the Society possessed abundance both of the old and new series of Transactions. On the detailed examination it was discovered, however, that this was not the case; for deficiencies here and there destroyed the continuity of parts and volumes. Again, with regard to the Journals, both as first issued, and later as divided into Botany and Zoology, only one or two complete sets could be made up. No complete set of the Proceedings was possible. The Council, under these circumstances, decided that such few complete sets of the Transactions as were available should be put aside, and hereafter only disposed of in sets. The odd duplicate parts in the Society's stock alone to be disposed of separately. As to Journals, it was recommended that application should be made to Fellows having odd numbers which might supply gaps, and request these to be resold to the Society.

During the visit of Dr. Ewald Ahrling, of Arboga, Sweden, to this country the summer before last, for the purpose of studying certain manuscripts of Linnæus (a subject he has devoted himself to for a long series of years), advantage was taken of his extensive and critical knowledge thereon, and both the Linnean Manuscripts and Correspondence were thoroughly inspected. The letters both of Linnæus himself and of his very numerous eminent correspondents of all nations and his own pupils are even yet of high interest and literary value. Our founder Sir James E. Smith's published volumes of Linnean correspondence have by no means entirely exhausted the subject, though at this date their historical outshadows their purely scientific worth. The Council freely permitted Dr. Ahrling to transcribe, and afterwards publish in his 'Carl von Linné's Arbeten,' any of the Linnean letters or other matter he should deem desirable.

Commencing under Dr. Ahrling's supervision, our own Officers have since during last year finally arranged alphabetically the Linnean Correspondence, so that now any special writer's letters can be laid hands on with ease. The Council have sanctioned the binding of the letters; but as these require special care, time, and great attention, binding necessarily proceeds at a slow rate.

Later on (viz. last summer) the Council acceded to a request made by the Swedish Academy of Sciences. The Council granted that the original MS. of Linnæus's 'Iter Lapponicum' and a set of electros of the old woodcuts from Linnæus's own rude drawings made during his celebrated journey, should be transmitted in a sealed case to Prof. Lindhagen, secretary of the Stockholm Academy. These, under the Academy's surveillance, Dr. Ahrling was to transcribe and use, preparatory to his forthcoming new edition in Swedish of his countryman's journey.

The MS. has, I may add, been safely returned, and is now laid on the table.

As the Fellows will remember, the portrait of the late Mr. Charles Darwin, painted from life by Mr. John Collier, though finished before the last Anniversary, could not then be formally presented to the Society, seeing that permission was given to exhibit it publicly at the Royal Academy. Today, however, Mr. Romanes hands it over in due form; and there can be no doubt as to the valuable acquisition the Society receives in memory of its distinguished and lamented Fellow.

Mr. Power's donation of the bust of the late Louis Agassiz, our Foreign Member, is another valuable addition to the Society's mementos of her great departed. The original marble bust by the celebrated American sculptor Hiram Power occupies a niche in the Museum of Comparative Zoology at Cambridge, Mass., U. S. A.; and our Society is indebted to the artist's son for the duplicate cast now presented.

Among other acquisitions to the Society's series of portraits of eminent Naturalists received within the last twelve months may be named :—

1. That of Thomas Pennant. The engraving was originally the property of our late Secretary Mr. Edward R. Alston, and recently, after his death, presented to the Society by his mother through Mr. Howard Saunders, F.L.S.

2. An autotype of the original engraving of Samuel Dale, (1738), presented by Mr. G. S. Boulger, F.L.S.

3. Lithograph of the head of Dr. P. L. Sclater, F.R.S., Secretary of the Zoological Society.

The Council likewise have purchased at a very moderate sum the portrait in oil of Jacob Bobart, Botanist, the first curator of the famous physic garden at Oxford. He was born in 1598, and died in 1679, afterwards being succeeded by his son as Curator and Professor of Botany at Oxford.

Lastly, I have to mention a well-known portrait of Linnæus, taken from life by the Swedish artist Magnus Hallman. On Linnæus's death this portrait does not seem to have been among the effects transmitted to Sir J. E. Smith; and since then it seems to have been lost sight of. The authenticity of this painting is vouched for in documents accompanying it as under:—

"I do hereby certify that the portrait of the deceased Archiater Carl von Linné painted in oil on parchment, of the size within the frame of about 8×6 French inches, and bearing on its back the following inscription:—

> "Carolus a Linné; Equ. Ord. Reg. Stellæ Polaris, Regis Sueciæ Archiater, Medicinæ et Botanices Professor in Universitate Regia Upsaliensi; Acad. Reg. Scient. Stockholm, Upsala, Paris, London, Petrop., Berol., Florent., Montpell., Toulous, Bern, Vien, Edinb., Triendh., Celle, Philadelph., Zeeland, Socius. Natus die 13 Maij 1707. Denatus die 10 January 1778.—Deam luctus augit amissi Cybelen. Magn. Hallman pinxit."

has during several years been in the possession of my late father, the well known antiquarian and author, Arvid August Afzelius, who considered it old, as it was already then such a rarity that he did not permit it being touched up or cleaned; not only did he not let it hang in his room uncovered, but he even had a wooden case made for it. My father used to say that this portrait had come into his possession from the physician Dr. P. A. Martin, who was a great-grandson of the Archiater v. Linné, and got this heirloom from his mother's aunt Miss Louise v. Linné, unmarried daughter of Carl v. Linné, who died in Upsala in the year 1839.

"Stockholm, in December 1879,
(signed) O. O. Afzelius,
Royal Swedish Life Guard."

"I do hereby certify that the above described portrait, which is considered in the family as the best likeness, is the same which formerly was in the possession of my late husband Dr. P. A. Martin, the son of the granddaughter of Archiater v. Linné, and before then belonged to Miss v. Linné at Upsala, who was an unmarried aunt of his mother, and who kept it hanging over her bed until her death.

"Stockholm, March 15, 1880,
(signed) Amalia Alb Martin,
Widow of Dr. P. A. Martin."

"That the portrait in question is considered as the one which is the best likeness of the Archiater v. Linné is hereby certified by the undersigned his great grandson.

"Upsala, September 1880,
(signed) MAURITZ RIDDERBJELKE."

"The two accompanying certificates issued by the Public Notaries in Stockholm and Upsala do certify the signatures and the perfect respectability and reliability of Mr. O. O. Afzelius, of the Dowager Mrs. Martin, and of Mr. Ridderbjelke.

"Legation of Sweden and Norway,
London, April 1883.
(signed) EDWARD PIPER."

I have been fortunate enough to secure this interesting portrait; and I hope I may be permitted to present it to the Society.

An application from the Royal Horticultural Society for the use of our apartments for a few evening meetings has been granted by the Council; the first took place on Tuesday, 8th of May *.

The Society's engagements with the Government as to periodically painting the apartments, and their present condition, must cause us (as our Treasurer has intimated) to prepare for the necessary expenditure.

Through the good offices of our active Treasurer, who presented the objectives, the Society is now furnished with four serviceable microscopes, whose usefulness at the evening meetings will be generally acknowledged, while they are likewise available to members.

The transfer of the Biological collections to the new Natural History Museum has made considerable progress during the past year; and the Keepers of the Zoological, Botanical, and Palæontological departments have been good enough to furnish me with some particulars, which I think may not be without interest to the Fellows.

The energies of the Zoological Department have been directed during the last twelve months chiefly to the work of removing the collections to South Kensington and of arranging them in the new galleries. The whole of the collection of Mammalia, all the dry specimens of reptiles and fishes, the collections of shells, corals, and sponges, and, finally, a great part of the animals preserved in spirits, have already been removed.

In arranging these collections considerable and unexpected obstacles were encountered. They arose chiefly from the deficient system of ventilation and warming, which occasioned in several of the galleries delays and changes in the plan of executing this

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* The second meeting took place on Tuesday, June 12.

work. However, the Osteological, Mammalian, Cetacean, Molluscan, Starfish, Reptilian, and Fish Galleries have their contents now fairly arranged in a general manner, although many details remain still to be worked out before these Galleries can be made accessible to the public and to students.

The Osteological Gallery has been furnished with cases so constructed that not only the Osteological preparations but also the study series of skins of Mammalia could be lodged in it. It will be most convenient for the student of this class of Vertebrata, who will find particular facilities for his study in having the exhibited collection in close proximity, namely in the gallery directly beneath.

This latter gallery is (as indeed had been anticipated) none too large for the exhibition of Mammalia, the length of cases exceeding that in the old Museum only by some seventy feet; and although a great number of the deteriorated specimens have been removed, they were almost immediately replaced by the better-mounted specimens from more recent acquisitions. There are therefore unmistakable signs of crowding in the gallery. In consequence of this the plan of exhibiting in the same cases with the stuffed Mammalia a series of the skeletons of types of families had to be abandoned; and these skeletons will now be exhibited in separate cases of suitable size placed in the bays between the principal cases. This mode of exhibition will have the advantage that the specimens will be much more accessible to study and examination than if they were placed among the stuffed specimens in the main cases.

For the collection of Cetaceans a large part of the basement has been partitioned off. This gallery, which is 138 feet long and 60 feet broad, affords room for the skeletons of seven of the largest species of Cetaceans; the spaces between them being occupied by smaller mounted specimens and skeletons, together with table-cases holding skulls and other preparations.

In the Reptile as well as in the Fish Gallery, skeletons of the principal types are placed among the mounted specimens; and a strictly systematic sequence is observed in the arrangement of these classes. The Batrachians have been transferred from the Reptiles, with which they had been associated in the old building, to the Fish Gallery, where they occupy a table-case in close proximity to the Dipnoi. In both these galleries the majority of the bulky specimens, which in the old Museum were suspended from the walls, occupy now places in the middle of the floor, where they are accessible to close examination.

In the Starfish Gallery a complete set of all the genera of will be followed by a uniform system of labelling, the labels being descriptive whenever necessary, and by the preparation of an instructive guide.

The ordinary work of the Department, although much hindered by this transference of the collections, has not been allowed to be interrupted. The acquisitions (which consisted of 5205 Vertebrates, 1842 Mollusks, 9038 Annulosa, and 3817 Vermes, Radiata, and Protozoa) had to be taken care of. The greater part were at once incorporated in the general collection, and many of the most interesting novelties described. It is with special satisfaction that I notice among the acquisitions important collections made by officers on board some of Her Majesty's ships, and presented by the Lords Commissioners of the Admiralty. Chief among these are the collections made by Dr. Coppinger during the progress of the survey of H.M.S. 'Alert' on the coasts of Australia and in the western parts of the Indian Ocean, which proved to be so numerous and rich in interesting novelties that they will be made the subject of a separate Report to be issued as one of the publications of the Museum. Of the 'Challenger' collections the set of types of Ophiuridæ were received; they are referable to 251 species, of which 176 were discovered during that voyage.

Mention was made in the last Annual Address of Mr. Boulenger's Catalogue of Batrachia Ecaudata. This has been followed since by a second volume, containing an account of the Batrachia Caudata and Apoda. Like the former, it offers an example of the great increase of our knowledge in every branch of Zoology within the last thirty years. In 1850, the year when the first edition of this catalogue was published, the number of species known was 72, represented in the Museum by 199 specimens; while in the present volume not less than 143 species are described and 1137 specimens enumerated.

Of the Entomological catalogues, the first volume of the 'List of Hymenoptera' has been completed by Mr. W. F. Kirby. In this work it is intended to give a complete list of all the species of Hymenoptera hitherto described, with references to the literature, to enumerate the specimens in the collection of the British Museum, and, finally, to describe and figure the most important of them, viz. the types of specific descriptions, many of which have been now published for the first time.

The Departmental Library has been growing apace, 1383 works having been added to it during the last twelve months. It will be a matter of congratulation to working zoologists that the Trustees have consented to transfer the very important collections of Hardwicke's drawings of Indian animals and

The additions to the Herbarium during the past year have been chiefly from Japan, Sumatra, India, Madagascar, and the territories of the United States. From Japan have been obtained an extensive series collected by James Bissett, Esq., a Fellow of this Society, during his residence in that country. Mr. H. O. Forbes, now exploring in the East, has sent extensive collections from Sumatra, together with a fine series of different species of *Myrmecodia*. Mr. C. B. Clarke also has presented a large and valuable series of critically named plants from his Indian herbarium; and other collections from the same country have been received from Dr. Aitchison and Mr. Duthie. The last collections from Madagascar made by the lamented Dr. Hildebrandt have been received, forming with his earlier collections a very important addition to our knowledge of the flora of that island, as well as of Eastern Tropical Africa, and giving additional cause for deploring the early loss of that accurate scientific explorer. The representation of the Flora of Madagascar in the Herbarium has been further increased by a set of the plants collected by the Rev. R. Baron, and still more by the recently received collections of the Rev. W. Deans Cowan, which are rendered the more valuable by original coloured drawings of the *Orchideæ*. Several American botanists have, in recent years, been exploring the new regions in the south-east of the United States dominions; and parcels of plants have been received from Parry, Vasey, Suksdorf, Curtiss, and Lemori, besides specimens from Prof. Asa Gray of the new and remarkable species described by him from these regions.

The British Herbarium has been increased by several local collections, which have greatly added to the representation of the geographical distribution of our Flora. And the important collections of *Diatomaceæ* of the late Rev. E. O'Meara, containing nearly 1200 specimens of these minute plants, with which he was so intimately acquainted, have been acquired.

The collection of prints and drawings of plants has been greatly increased during the year—the principal additions being an extensive series of original drawings of Indian plants in thirteen folio volumes, formerly the property of Dr. J. Fleming, and the original water-colour drawings of Maund's 'Botanic Garden,' comprising pictures of 1248 plants, presented by the Misses Maund.

The Department of Geology and Palæontology occupies the ground-floor of the eastern half of the New Natural History Museum, Cromwell Road, having a series of nine galleries set apart for the display and conservation of its collections, and is now quite separated from the "Mineralogical Collection," which is placed in the Eastern Gallery on the first floor.

In the old Museum only a small proportion of the collection of fossils could be seen by the ordinary visitor, and the portion displayed was not only crowded and ill-arranged, but was so intermixed with the collection of minerals, that its usefulness was in great measure destroyed. The present galleries afford to the Geological Collection twice the exhibiting-space which they occupied *conjointly with Mineralogy* in the old building; there are also well-lighted studies, store-rooms, and workshops for carrying on the practical work of the Department, and for the convenience of students and artists.

The Geological collections were among the first to be transferred to the new building, their removal having occupied from 14th of June to 16th of October 1880. The three principal galleries, occupied by the *Fossil Mammalia* and *Reptilia*, were opened to the public on the 18th April, 1881; and a penny guide to those galleries was issued on that day to the public. Gallery A (one of a series of top-lighted Galleries running north from the Fossil Reptile Gallery), 140 feet in length and 40 feet in breadth, has been set apart for the exhibition of the *Fossil Fishes*. This group (always largely represented in the fossil state in the British Museum) has lately received two splendid additions by the acquisition of the famous collection of the Earl of Enniskillen, from Florence Court, Ireland, and that of the late Sir Philip de Malpas Grey-Egerton, Bart., M.P., both obtained within the last two years. The incorporation of these large collections has necessitated the temporary closing of this Gallery (the contents of which had been roughly arranged and opened to the public in 1882). The acquisition of the "Egerton Collection" added about 4300 specimens, whilst the "Enniskillen Collection" will add about 9600 more specimens to the national Museum. Both collections are exceedingly rich in "types," especially those illustrating the works of Agassiz and the various memoirs of Egerton, Traquair, Owen, Davis, Huxley, and others.

In a narrow Gallery (parallel to Gallery A) are placed the fossil *Cephalopods*, probably the best and largest collection of this interesting group as yet brought together in any museum.

And here it may be stated that the arrangement adopted for the several classes of Fossil Organic remains has been in the first instance *Zoological*, and subordinately stratigraphical. Thus, in the first cases of this gallery are placed the Dibranchiate (naked) Cephalopods—Squids, Cuttles, Calamaries, &c., at once the latest and most highly-organized division of the group; whilst in the subsequent cases (arranged in stratigraphical order) follow the Tetrabranchiate forms, such as *Nautilus*, *Ammonites*, *Ceratites*, *Goniatites*, and *Orthoceras*, representing the earlier and less-specialized forms of shell-bearing Cephalopoda.

The next wide gallery (corresponding to Gallery A), Gallery B, is devoted to the succeeding groups of Invertebrata. Here are placed the *Gasteropoda* and *Lamellibranchiata*, occupying the wall- and table-cases on one side of the gallery, and the *Mollus-*

*coida*, *Arthropoda*, *Annulosa*, and *Echinodermata* on the other side. [Each of the three wide galleries contains 32 table-cases (with cabinets beneath) and 18 wall-cases. The narrow Cephalopod Gallery has 16 table-cases and 14 wall-cases ]

The narrow gallery between Galleries B and C is reserved as a work-room for the use of students, and will also contain the Geological Library.

The third wide gallery (C), which has just been fitted up with table- and wall-cases, is devoted to the reception of:—(1) The *Cœlenterata*, comprising the Fossil Corals and Hydrozoa, in which latter are included the *Graptolites*. The arrangement of the Fossil Corals is now nearly completed.

(2) The *Protozoa* (*Spongida*, *Radiolaria*, and *Foraminifera*). Dr. G. J. Hinde, F.G.S., has devoted the past three years to the study of the Fossil Sponges in the British Museum, and has just completed an exhaustive memoir thereon (now in the press), illustrated by 35 plates, which will be issued in July next by the Trustees.

A Catalogue of the Foraminifera has been prepared by Prof. T. R. Jones, F.R.S., and has been printed by order of the Trustees.

(3) The eastern half of Gallery C is devoted to the exhibition of the Fossil Plants. Dr. Woodward hopes to be able to open this gallery to the public towards the end of the present year.

The fourth narrow gallery (next Gallery C) is designed to contain—(1) a stratigraphical collection for the use of Students; (2) a series of special "type-collections," such as the "William-Smith" Collection, the "Gilbertson," the "Sowerby," and the "Edwards" Collections; (3) upon its eastern walls large objects in frames are fixed, such as slabs of foot-prints from the Potsdam Sandstone, the Trias of Connecticut, &c. &c.

The history of the extinct wingless birds of New Zealand has received fresh illustrations by the discovery of another entire skeleton of a small but adult individual (named by Professor Owen *Dinornis parvus*) from a fissure near Nelson, and by parts of another example from a cave near Lake Wakatipu, Queenstown, Otago, N. Z. (named *D. didinus*, Owen). In this latter specimen the skin of the neck, the head, two legs, and feet have been preserved in a dried state covering the bones, and some few feathers of a reddish hue are still attached to the leg. The tracheal rings of the windpipe may also still be seen *in situ*, and the sclerotic plates of the eyes and the sheaths of the claws. One foot also shows the hind claws (hallux) of the bird still attached to the foot.

Prof. O. C. Marsh has kindly presented casts of parts of the skeleton of *Hesperornis regalis*, a large wingless bird with teeth, from the Cretaceous rocks of Kansas; a cast of the very nearly entire flying lizard from Solenhofen (*Rhamphorhynchus phyllurus*), having the impression of the expanded membrane of the wings still preserved; and he has just added the cast of the thigh-bone of a huge Dinosaur from the Cretaceous formation of the Rocky Mountains (named *Atlantosaurus*), measuring more than six feet in length, and rivalling in size the famous limb-bones of *Cetiosaurus* in the Oxford Museum.

It is to be hoped that the Trustees may be able, ere long, to secure *actual specimens* of the Reptiles, Birds, and Mammals from this marvellously rich Cretaceous region of North America.

An entire bony dermal body-shield and restored tail-sheath of a new species of extinct giant Armadillo (*Hoplophorus ornatus*) has just been added to the already rich series of fossil Edentata from the alluvial deposits of Buenos Ayres, rendered historical by the researches of Burmeister and Owen.

The first "Illustrated GUIDE" printed by the Trustees was issued in October 1882, for the Geological Department. Dr. Woodward is endeavouring, by coloured *maps* and *tables*, to show in all cases the Geographical and Geological range of each genus; diagrams and illustrations have also been introduced to explain the anatomical details and the reconstruction (where possible) of the fossil organism. *Recent analogues* have also been introduced to add to the instructiveness of the collections. It is hoped, by the judicious introduction of selected typical skeletons of living Mammals, to be placed in the South-east Gallery in juxtaposition to their allied fossil remains, that the student of Comparative Anatomy may not only suffer no inconvenience by the exhibition of the fossil Mammalia in a gallery of their own, but will, on the contrary, find the arrangement conducive to a better comprehension and illustration of the continuity of the Life-history of the Earth, which, as Biologists, we must all desire to see clearly displayed for the instruction of students and the public at large.

During the past year our Meetings have been well attended; and I think that the members present will agree with me when I say that they have been most instructive. We have had a number of very interesting exhibitions, for which our thanks are especially due to the authorities of Kew and of the British Museum.

In the past season 52 papers have been read before the Society. Many of these have been printed; but a few important memoirs still are in the press, and these it is hoped will be issued at an early date.

As regards sales of Publications, this has been about an average. It is noticeable, however, that the Journals have increased in their sale.

It will be seen that the Society still keep in view the words of our veteran President Mr. Bentham in his remarks in 1873, when he stated that the three great objects of the Society should be *"the endeavour to render our Meetings attractive, the extended usefulness of our Library, and the steady maintenance of our publications."*

There have been issued during the year:—

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| Transactions, | Botany, | 47 pages and 10 plates. |
| do. | Zoology, | 86 pages and 9 plates. |
| Journal, | Botany, | 429 pages and 32 plates. |
| do. | Zoology, | 408 pages and 13 plates. |
| Proceedings............ | | 164 pages. |

In Zoology we have had a valuable series of papers on the Mollusca of the 'Challenger' Expedition by the Rev. R. Boog Watson. To Prof. P. Martin Duncan we owe some important papers on the morphology of Echinodermata, and the calcareous parts of Corals, particularly of certain forms belonging to the Fungidæ.

Mr. MacLachlan has called our attention to the curious fact that the larva of a New-Zealand species of Caddis-fly is marine in its habits. Mr. Day has furnished several papers which deal respectively with the British Salmones, with variations in the form and hybridism of *S. fontinalis*, and the marine fauna of the Eastern shores of Scotland. In the last-mentioned paper, besides enumerating a large number of species dredged on H.M.S. 'Triton' (in the identification of which he received the valuable assistance of Prof. Jeffrey Bell and Mr. Ridley), he communicated a number of observations on the natural history of the Herring.

The Rev. T. Powell has contributed a short paper on the structure and habits of a Coral-reef Annelid; and Mr. Phillips has described a new ciliate Infusorian. Prof. E. Ray Lankester has communicated some interesting observations on the habits of Scorpions.

Mr. Romanes, our Zoological Secretary, in conjunction with Mr. W. H. Pollock, has favoured us with some observations showing the existence of the sense of smell in Sea-anemones. Mr. Romanes has also read another paper proving that the same sense also occurs in Starfish, and otherwise dealing with the physiology of the Echinodermata.

Mr. A. G. Butler has described some species of Butterflies collected by Lord Walsingham during his recent tour in California; Mr. P. H. Carpenter has described certain new or little-known Comatulæ; Messrs. Sorby and Herdman some Ascidians collected during a cruise of the yacht 'Glimpse;' Mr. S. Hanley a new species of *Donax*; and Mr. W. G. Brook a new genus of Collembola.

Mr. E. P. Ramsay has sent us a note on the type specimen of *Carpophaga Finschii*; Mr. W. F. Kirby some remarks on Chalcidinæ; and Prof. Cobbold an interesting dercription of a new human Cestode. Dr. G. and Dr. F. E. Hoggan communicate the results of a careful and interesting histological research on cutaneous nerve-terminations.

Mr. S. Grieve records his discovery of remains of the Great Auk in Argyllshire; and Mr. R. B. Sharpe continues his important contributions to the Ornithology of New Guinea.

I have myself continued my observations on the habits of the Social Hymenoptera, and have also communicated some observations on the sense of color in the lower animals.

Lastly, we have been glad once more to receive a communication from Prof. Owen, who has favoured us with his views on the Cerebral Homologies in Vertebrates and Invertebrates.

In our Transactions we have published Mr. G. E. Dobson's paper on the Digastric Muscle; and an elaborate and beautiful memoir by Mr. P. H. Gosse on the Clasping Organs ancillary to generation in certain groups of the Lepidoptera.

*The following are the Botanical Papers printed by the Linnean Society during the year ending April* 30, 1883.

Physiological etc.:—

1. Mr. Darwin's papers:—(*a*) The action of Carbonate of Ammonia on Chlorophyll-bodies.
2. (*b*) The action of Carbonate of Ammonia on the Roots of certain Plants. These were alluded to in last Address and botanical report.
3. Development of the Pollen-masses of *Asclepias Cornuti*, by T. Corry. A continuation of these researches has been submitted for reading since the former portion was revised and printed.
4. The Connexion between Geotropism and Growth, by Francis Darwin. Detailing experiments on cut roots.
5. Negative Heliotropism in *Fumaria corymbosa* observed by M. Battandier of Algeria. (A note by the Secretary.)
6. Fertilization of *Roscoea* and a species of *Salvia*, by R. I. Lynch.
7. Phyllotaxis of *Buddleia auriculata*, by Dr. Masters.

8, 9. Rev. G. Henslow, two papers on Teratology, regarding a monstrous form of Mignonette, and cases of staminiferous corollas in Foxglove and Potato.

10. Teratological notes by Mr. N. Ridley, of the Botanical Department, British Museum.
11. Mr. Otto Tepper's observation of the malformed leaves of *Beyeria opaca*.
12. Occurrences of single detached florets on the collar of the root of *Catananche lutea*, by M. Battandier, in a note by the Secretary.

New plants, and systematic work:—

Europe.

13. New British Orchid, Mr. C. B. Clarke.

14. *Crocus*, its distribution &c., by Mr. Maw. (Of course it extends beyond Europe; but the genus is essentially Mediterranean.)

Asia.

15. The new genus *Dyera*, a rubber-yielding plant, by Sir J. D. Hooker.
16. Himalayan Primulas and *Androsace*, by Dr. Watt, elaborated by Sir J. D. Hooker.
17. The origin of the drug Cassia lignea, by Mr. Dyer.
18. On certain Indian Cyrtandreæ, by Mr. H. O. Forbes.
19. A list of Himalayan Algæ collected by Dr. Watt, named by Dr. Dickie. (Dickie's last paper.)

19a. Himalayan Ferns, a correction of certain names made by Mr. C. B. Clarke.

20. Malayan and Chinese Lichens collected by Dr. Maingay, by Rev. J. M. Crombie.
21. The Coffee-leaf disease, *Hemileia vastatrix*, by H. Marshall Ward. (A long paper, touching a very important subject, involving the welfare of large estates in Ceylon.)

Africa.

22–3. Mr. Baker, Contributions to Malagasy Flora. (Five new genera here established and figured.)

24. Dr. Masters, New *Gossypium*.
25. Mr. Bolus, Cape Orchids. (Has a complete list of the Cape species.)

America.

26. *Abies Pattonii*, by Prof. Mc Nab.
27. Passifloreæ collected by M. André in Ecuador and New Granada, by Dr. Masters.

Australia, etc.

28. Australian Fungi, part ii., by Rev. M. J. Berkeley and Mr. C. E. Broome (*Trans.*).
29. Lichens of N. S. Wales, by Mr. Knight (*Trans.*).
30. Medicinal plants of Queensland, by Capt. Armit.
31. Tasmanian plants found near Adelaide, by Otto Tepper.
32. New Zealand, additions to the flora of, by T. Kirk.
33. Additional note on the 'Challenger' Lichens, by Rev. J. M. Crombie.

Mr. Jackson and Mr. Romanes have been so good as to prepare some notes on the principal Botanical and Zoological results of the year; but before asking them to be so good as to read them, I must say one word on the great event of the year, namely the colleague on the termination of their great and invaluable work, of which it would be impossible to speak too highly. The first part was published in 1862. The number of genera included are about 8000, containing about 100,000 species; but Mr. Jackson, who has gone carefully over the whole work, informs me that more than 26,000 genera are mentioned, the great majority of which are ranked as synonyms.

In conclusion I must express my thanks to the Fellows, and especially to the Council and Officers, for their support during the past year. I am well aware of my deficiencies as President, especially in comparison with my eminent predecessors.

## *Report on the Chief Botanical Publications issued during the twelve months from May* 1882 *to April* 1883. *Prepared for the Anniversary of the Linnean Society.*

At the last Anniversary I attempted to lay before you a hasty sketch of the more important Botanical publications which had come under my notice during the previous twelve months. In pursuance of the same object, I have now the honour to submit to you a similar list for the Society's year which has just closed. I cannot pretend to criticise the majority of the works or papers cited, but must perforce content myself with little more than indicating the productions of the various authors by name.

Proceeding on the same plan of arrangement as last year, I would mention that Prof. Delpino has again issued his 'Rivista di botanica' for 1881. Dr. Just's 'Botanischer Jahresbericht' has been issued with rather greater promptitude than heretofore, to the great gratification of all working botanists. I am not aware if Heeren Bohnenseig and Burck's 'Repertorium' has been discontinued; but I have not seen a copy. Drs. Uhlworm and Behren's 'Botanisches Centralblatt' is even more appreciated than before, and has become a most useful publication. Of other bibliographic issues I may name:—the first part of Trautvetter's "Incrementa floræ phanerogamicæ Rossicæ," in the 'Acta' of the St. Petersburg Botanic Garden; Dr. Bretschneider's Studies in the early Western researches into Chinese Botany; M. Deby's Catalogue of Books on Diatomaceæ; and the attempts towards a bibliography of Applied Botany issued by the Index Society.

Of Palæobotanical productions I may allude to Göppert and Menge's 'Flora des Bernsteins,' vol. i.; Dr. Paul Reinsch's Microphotographs of Coal; the third volume of Renault's 'Cours de botanique fossile,' comprising the Ferns; the third part of the first volume of Mr. Gardner and Baron von Ettingshausen's 'British Eocene Flora;' Prof. Lesquereux, ii., Contributions to American Geology, contains "Fossil plants of the auriferous drift-gravels of the Sierra Nevada;" and Part i. of Heer's 'Flora fossilis Grœnlandica.'

Occupying a position by itself, I must next mention M. Alph. de Candolle's 'L'Origine des Plantes cultivées,' itself an expansion of a portion of his 'Geographie botanique' of nearly thirty years before.

The productions ostensibly arising from Botanical Gardens are the following:—The second volume of Prof. Eichler's 'Jahrbuch des K. bot. Gartens zu Berlin,' in continuation of the volume I cited last year; Signor Todaro's 'Hortus botanicus Panormitanus' has entered upon a second volume, two fasciculi having appeared since I last spoke of the book; Heer Treub has brought out vol. iii. of the 'Annales du jardin botanique de Buitenzorg;' and M. Lavallée has issued the fifth livraison of his exquisitely illustrated 'Arboretum Segrezianum.'

Turning to Vegetable Physiology, I would first remind you of the publication of the second English edition of Sachs's 'Textbook of Botany,' under the editorship of Dr. Vines. A portion of Sachs's original work has been amplified by Dr. Goebel under the title of 'Pflanzenmorphologie.' Sachs himself has edited Heft 4 of the second volume of 'Arbeiten des botanischen Instituts in Würzburg;' and Pringsheim's 'Jahrbuch' has continued to bring papers of sterling value and interest before the botanical world. Dr. R. Grassmann has brought out the second volume of the book I mentioned at the last Anniversary, styling it 'Buch ii. Der Lebenslehre.'

Of particular interest I may specially allude here to Mr. Gardener's paper in the Proc. Royal Society on the continuity of Protoplasm in the motile organs of plants; and to Mr. Hillhouse's observation on the intercellular connection of Protoplasm —the latter essay being in German in the 'Botanisches Centralblatt.' Herr Vöchting has published a treatise, 'Die Bewegungen der Blüthen und Früchte,' at Bonn; and Prof. Strasburger has issued his furthur researches on the origin and growth of the membrane of the cell, and the processes which precede the division of the cell-nucleus. Dr. Herman Mueller has produced further researches on the Fertilization of Flowers by Insects— a topic which has been also handled at one of our own meetings by Mr. A. W. Bennett. Count Solms-Laubach has devoted much attention to the process of Caprification and its antiquity. It may be of interest here to remark that the first Italian translation of Mr. Darwin's classical 'Fertilization of Orchids' has just appeared. Dr. Schmitz on the chromatophores of Algæ, Bentley's 'Manual of Botany,' the continuation of Prof. Scheuk's 'Handbuch,' a second edition of Dr. Behrens's 'Methodisches Lehrbuch,' a small primer by Mr. Bettany, a compilation from other textbooks by Mr. Johnstone, Signor Calza's 'Elementi,' and an Italian translation of De Bary under the title of 'Manuale di botanica,' a Dutch 'Handleiding' by Heer Salverda, and M. Crie's 'Nouv. éléments.' For field use we have the third English edition of Nave's 'Collector's Handbook,' and Mr. W. P. Manton's 'Field Botany, a Handbook for Collectors.'

Botanical diagrams are closely connected with the works last mentioned. Of these we have Drs. Dodel-Port, a continuation, and an English translation by McAlpine entitled 'Botanical Atlas;' the fifth section of Dr. Kny's diagrams; and two parts of Zippel and Bollmann's illustrations of German plants.

The most important achievement in systematic botany is undoubtedly the completion of Bentham and Hooker's 'Genera' by the issue of the second part of vol. iii., containing the Monocotyledons. This has been alluded to in the President's Address; I have therefore no need to dwell upon it here. The fourth volume of De Candolle's 'Monographiæ' has also reached us within the last three weeks: the bulk of the volume is occupied by monographs of the Burseraceæ and Anacardiaceæ by Dr. Engler, and Count Solms-Laubach contributes a revision of the small order Pontederiaceæ. The third part of the second volume of Wilson Saunders's 'Refugium' has somewhat unexpectedly come out; it contains descriptions of certain Orchids by Prof. Reichenbach. Dr. Wawra has commenced to publish the botanical results of the travels of the Prince of Sax-Coburg Gotha, entitled 'Itinera principum S. Coburgi:' Part i. contains the Mimoseæ, Lobeliaceæ, and Bromeliaceæ.

Systematic works of less extensive scope are those by Mr. Baker on the genus *Cyclamen* in the Gardeners' Chronicle, Mr. Maw's Remarks on the distribution of *Crocus* in our Journal, Baron von Mueller's continuation of his monograph of *Eucalyptus*, Prof. Crépin's contribution to a monograph of *Rosa* in the Belgian 'Bulletin,' a monograph by Dr. Urban on Turneraceæ in Eichler's Yearbook of the Berlin Gardens, and an essay by Prof. Warming on *Podostemma* in the Copenhagen 'Transactions.' There are two productions which may be cited here as splitting carried to an inordinate extreme. M. Gandoger has issued according to his views a monograph of *Polygonum*, and his 'Tabulæ rhodologicæ:' the latter contains latin diagnoses of professedly 4268 European species of *Rosa*. Mr. Baker considers that there are about fifty good species of the genus within the limits of Europe; so that the species-making here indulged in is of the wildest kind.

Amongst Cryptogams, I may give Mr. Spruce's account of *Cephalogia* amongst the Hepaticæ; an unfinished monograph of

Characeæ by Alex. Braun, edited by Dr. Nordstedt; and a volume by Mr. Sandford on Exotic Ferns and Selaginellas. In Fungi we have Signor Saccardo's important work, his 'Sylloge fungorum,' the first volume devoted to a collection of diagnoses of the Pyrenomycetes; Prof. Fries has issued two new parts of his 'Icones selectæ hymenomycetarum;' M. Lucand, 'Coloured figures of Fungi,' 26–50; the 'Grevillea Atlas;' 37 plates of Hymenomycetous British Fungi, issued by Dr. M. C. Cooke; the second part of Léon Marchand's 'Botanique cryptogamique,' containing the Ferments; Herr Zopf on the Schizomycetes, in the 'Botanisches Centralblatt;' a popular work by Mr. T. Brittain on Microfungi; and three papers by Mr. Marshall Ward—on *Hemileia* in our Journal, and on tropical epiphyllous fungi in the Quart. Journ. Micr. Science and the Proceedings of the Royal Society.

Local works may be fitly preceded by the fourth and concluding part of Nyman's 'Conspectus,' with an index to genera only. A complete index has been compiled; but issue of it has been deferred for some time, until a Supplement can be prepared. M. Husnot has published a brochure on European *Sphagna*, and Herr Sydow on the European Characeæ hitherto known. Messrs. Gonnermann and Rabenhorst's 'Mycologia europæa' has reached the 9th part.

British Botany is represented by Mr. Townsend's 'Flora of Hampshire,' Dr. Braithwaite's parts 5 and 6 of his 'Moss-Flora,' Dr. M. C. Cooke's 'Illustrations of British Fungi,' part vii., a new issue of Mr. Grattan's popular book on British Marine Algæ, and parts 3 and 4 of Dr. Cooke's 'Freshwater Algæ,' the last part having some adverse criticism in the 'Botanische Zeitung.'

*Belgium.*—Dr. Van Heurck's 'Synopsis des Diatomées de Belgique' has attained its fifth part. M. Layen has brought out a first Supplement to the 'Cryptogamic Flora of Luxembourg'; this contains fungi.

*France.*—M. C. Pin's 'Flore élémentaire de France' has reached its fourth edition; whilst MM. Fonvert and Achintre's 'Flore d'Aix en Provence' has reached a second edition. M. Clavan has begun a Flora of the Gironde, his first fasciculus, of more than 200 pages, embracing the Thalamifloræ. M. H. Olivier has started a Lichen-Flora of the Department of the Orne. Cosson and Germain de St. Pierre's Atlas of the Parisian Flora has been reissued; and the eighteenth edition of M. Bautier's 'Tableau analytique de la flore Parisienne' has been announced in the booksellers' catalogues.

*Germany, South.*—Dr. Pfister has begun to publish the Ferns of Austria nature-printed; and Herren Halácky and Braun a Supplement to the Flora of Lower Austria.

*Germany, North.*—Dr. Garcke's handy volume of the German Flora has reached a fourteenth edition; and of Rabenhorst's

'Kryptogamenflora von Deutschland,' the fungi, by Dr. Winter, will be completed by the issue of the thirteenth part; of Section 2, Marine Algæ, by F. Hanck, two parts have appeared. Parts 8 and 9 of Waldner's 'German Ferns' have seen the light within the last twelvemonth. Dr. Karsten has brought out an additional portion of his Pharmaceutical Flora of Germany.

The following local floras of Germany deserve passing mention:—Kräpelen's 'Excursionsflora des Nord- und Mitteldeutschland,' ed. 2; Böttler's 'Excursions fl. von Unterfranken;' and Erfurth's 'Flora von Weimar,' ed. 4.

Two publications devoted to the Alpine plants of Central Europe have been continued this year:—Dalla Torre's, published in Vienna, with a very useful Texteheft; and Seboth's; volume iii. of the latter also in an English form. The Flora of Mont Blanc has also been attempted by V. Payot, of Chamounix.

The flora of Davos has been published by G. Geissler in a small form.

Prof. Oudemans, of Amsterdam, has brought out the second part of his historical account of Botany in the Netherlands.

Prof. Kindberg has issued his views on the natural orders and genera of Swedish Mosses.

*Italy.*—The Compendium of the Italian Flora by Signori Cesati, Gilbelli, and Passerini has been continued, the text having reached *Medicago*, and the plates to Caprifoliaceæ. Saccardo has brought out fasc. 29–32 of his 'Fungi italici autographice delineati.'

Klinge's work on the Equiseta of Kurland is the only work on Russian botany I am able to mention this year, besides Trautvetter's already referred to.

*Spain.*—Prof. Willkomm, of Prague, has prosecuted his 'Illustrations of Spanish Plants' with fasc. 4 and 5. MM. Burnat and Barbey have also promulgated the results of their journey to the Balearic Islands.

I have only two productions relative to African botany to mention here:—M. Cosson's 'Illustrationes floræ Atlanticæ;' and some new species published by Franchet in Revoil's 'Somaliland.'

In Asian botany we have the welcome first fasciculus of vol. v. of Dr. Boissier's 'Flora Orientalis,' devoted to Monocotyledons. The literature of Indian botany has also been enriched by Sir J. D. Hooker's ninth part of his 'Flora of British India,' extending from Vacciniaceæ to Apocynaceæ; and Dr. Watt's paper on *Primula* and *Androsace* in our Journal. Colonel Beddome also informs me that his 'Manual of British Ferns' is now out; whilst economic botany is represented by Mr. Gamble's 'Manual of Indian Timbers.' Mr. Floyer has also noted some of the plants observed by him in Baluchistan in his record of that journey. Dr. Regel has published Latin diagnoses of new plants in his account of Fedschenko's travels in Turkestan. M. Pierre's 'Flore forestière de la Cochinchine' has reached its fourth fasciculus. In Malayan botany we find Dr. Engler has described Signor Beccari's Araceæ; and Dr. Nylander and Rev. M. J. Crombie have dealt with the Lichens collected by the late Dr. Maingay.

In the New World, Dr. Asa Gray has given the results of his recent studies in some of the most important European herbaria (the Linnean herbarium amongst them) of *Aster* and *Solidago*. Prof. Sereno Watson has also continued his remarks under a similar title to Dr. Gray's, viz. 'Contributions to American Botany.' L. F. Ward has produced a Flora of Washington; Kellogg, on the forest-trees of California.

Mr. Hemsley has completed his second volume, and entered upon the third, of the Botany of Godman and Salvin's 'Biologia Centrali-Americana.'

Dr. Urban has published some remarks on South-American Flora, besides the Brazilian, in 'Linnæa,' describing some of Dr. Glaziou's plants. From Dr. P. Sagot we have also a Catalogue of French-Guyana plants; and from Señor F. Philippi the first part (nearly 400 pages) of his Catalogue of Vascular Plants of Chili; this part contains many newly described species. Dr. Masters, in the pages of our own Journal, has described the Passifloraceæ of Ecuador and New Granada collected by M. André. Bresadola has continued his 'Fungi tridentini novi,' fasc. 2 & 3 having lately seen the light.

From Australia we have recently received a Systematic Census of the plants occurring in that part of the world, drawn up by the indefatigable Baron von Mueller. A contribution to our knowledge of New-South-Wales Lichens has also been published in our Transactions by Mr. C. Knight.

My last book on local botany comes from New Zealand, on the Ferns and Fern-allies of that colony, and is by Mr. G. M. Thomson.

The concluding section consists of work done in economic botany. Prof. Flückiger has issued the second edition of his 'Pharmacognosis des Pflanzenreiches;' and a Danish book on the same topic has been published by S. Rützon. Dr. Luerssen has completed his admirable 'Medicinisch-pharmacographisches Lehrbuch' with the twenty-first number, and has begun a new work dealing with German officinal plants. Prof. Flückiger has written again on Cinchona barks; whilst the remarks of Heer Van Gorkom have also been translated into English. Prof. Oudemans has published a book in Dutch on economic plants; and Heer Bischof Grevelink, likewise in Dutch, on the useful plants of the Netherland East Indies.

Amonst sundry publications which are hard to classify, are the tenth series of Noerdlinger's Sections of Woods, Mr. John Smith's

'Dictionary of Popular Names of Economic Plants,' Hartig's 'Lehrbuch der Baumkrankheiten,' and the second volume of his Report on work done in the Forestry Institution of Munich.

It will be needless to repeat that much work has been omitted from the foregoing summary, which I have condensed as much as possible.

### *Report on some of the more important Zoological Papers published elsewhere than at the Linnean Society.*

Protozoa.—Mr. Brady describes a new type of Foraminifera, which he names *Keramosphæra Murrayi* (Ann. & Mag. Nat. Hist. [5] x. 242–245); and L. Oliver has a paper on *Bacterium rubescens*, in which he contends that Lankester (Quart. Journ. Micr. Sc. xvi.) is mistaken in regarding these organisms as bacteria. The splendid Manual of the Infusoria which has for long been published in successive parts by one of our Fellows, Mr. Saville Kent, has this year been completed; it contains full descriptions and beautifully executed drawings of all the known species. Prof. Engelmann's researches on Perception of Light and Colour by Infusoria should also be alluded to (Pflüger's Arch. xxix. 387–400).

Cœlenterata.—C. Chun publishes a paper on the histology of *Siphonophora* (Zool. Anzeig. v. 400–406); and G. von Koch contributes some interesting results of investigations concerning the morphology of the Coral-skeleton (Biol. Centralbl. ii. 1882, 583–593). Mr. J. W. Fewkes, who has already added considerably to our knowledge of the New-world Acalephæ, has published another instalment of his results (Bull. Mus. Comp. Zool. Cambridge, ix. 251–310); and an elaborate description of a new species of Medusa from South Australia (*Cyanea Annaskala*), is given by R. von Lendenfeld (Zeitschr. f. wiss. Zool. 1882, pp. 465–553). Mr. W. Marshall, in his observations on Hydræ (ibid. 664–702), agrees with Lankester that the green colouring-matter of *H. viridis* is not due to symbiosis, but belongs to the organization of the polyp. W. Marshall, in conjunction with Prof. M. Marshall, also gives an account of the Pennatulids collected by the Oban Dredging Excursion of the Birmingham Nat. Hist. & Micro. Soc. (this is in the form of a memoir).

Echinodermata.—M. Perrier, in two distinct papers, deals with the morphology of two interesting and remarkable starfish (viz. *Brisingia* and *Caulaster pedunculatus*); and in a third paper he describes a new deep-sea stalked crinoid (*Democrinus Parfaiti*). In yet another paper, written in conjunction with M. Poirier, he treats of the circulatory apparatus of echinoderms generally. M. Jourdain has published a somewhat laborious research on the genital passages of *Asterias*; and in subsequent papers has added considerably to our knowledge of the anatomy of Holothurians, describing among other things a dense nervous plexus situated in the integument. R. Koehler, continuing his researches into the morphology of the Echinodermata, devotes a paper to the structure of the Polian vesicle and the pedicellariæ. All the above papers appear in 'Comptes Rendus,' 1882–83. Prof. H. Ludwig has published an elaborate paper on the development of *Asterina gibbosa* (Zeitschr. f. wiss. Zool. xxxvii. 1–98), which is marked by the high ability that he is so well known to possess. M. N. Christo-Apostolidès has published a valuable memoir on the Ophiuroids (Arch. d. Zool. expér. x. 121–224); and Danielssen and Koren have given a full description of the many new species and genera of Holothurians collected in the Norwegian Arctic Expedition; while Mr. Sladen, at a recent meeting of this Society, has given us a full description of many species and genera of starfish collected by the 'Challenger' Expedition, not yet published.

ANNELIDA.—The past year has been particularly rich in researches on Annelida. Prof. W. Salensky has published a paper on the Development of Annelids (Centralbl. ii. 198–208); and J. W. Spengel has published another on the Development of the Central Nervous System of Annelids (ibid. ii. 231–236). The Trematodes have been made the subject of one paper by Prof. Ercolani, who deals with their changes in adaptation to their environment (Arch. Ital. Biol. i. 439–453); and also of another paper by Villot, who investigates the anatomy of their vascular system (Zool. Anzeig. v. 505–508). The Cestodes have been investigated by Dr. Zoltán von Roboz (Zeitschr. f. wiss. Zool. xxxvii. 263–285), by M. Morriez (Compt. Rend. 661–663), and by Kiessling (Arch. f. Naturgesch. 241–280). E. van Beneden has published an important paper on the *Dicyemidæ* (Arch. de Biol. iii. 195–228); and C. Julin has published a no less important one on the *Orthonectida* (ibid. 1–54). An enormous Rotifer (measuring $\frac{1}{10}$ of an inch) has been discovered by Mr. Flood in Fifeshire, and has been fully described by Dr. Hudson in the current number of the Journ. Micro. Soc. An interesting paper is supplied by Kennel on *Ctenodrilus pardalis* (Arbeit. zool.-zoot. Inst. Würzburg, 373–429); he regards the type as a "collective" one, showing affinities on the one hand with the *Oligochæta* and on the other with the *Polychæta*. Another intermediate type of Annelid is described by Prof. Ray Lankester in *Hamingia arctica* (Ann. & Mag. Nat. Hist. [5] xi. 37–43), which presents a combination of the characters of *Bonellia* & *Thalassema*. Mention must also be made of J. von Kennel's paper on the anatomy of *Prorhynchus* (Arbeit. zool.-zoot. Inst. Würzburg, vi. 69–90), of Korschelt's description of a new species of Turbellarian (Zeitschr. f. wiss. Zool. 1882, 315–353), and of the interesting research by Prof. Thomas concerning the life-history of the liver-fluke (Quart Journ. Micro. Sc. 1883, 99–133). Hanson gives an account of the Annelids collected by the Norwegian North-Sea

Expedition of 1876–78; and last, though not least, we must remember to greet with the highest approbation the splendid monograph on the Turbellarians which has been published in Leipzig by Dr. Ludwig von Graff.

Mollusca.—Vignol publishes a paper devoted to a careful investigation of the nervous system of Mollusca, especially the Gasteropoda (Compt. Rend. 244–251); M. Bouchon-Brandley describes a unisexual species of oyster (ibid. 256–259); Sarasin has an elaborate paper on the development of *Bithynia tentaculata* in Arbeit. zool.-zoot. Inst. Würzburg. Haller has been engaged investigating the morphology of the Adriatic Chitons (Arbeit. zool. Inst. Wien, 323–396); and Rabl has published an able memoir on the development of the *Prosobranchiata*. The embryology of the Bryozoa has been made the subject of a carefu investigation by Barrois, who is led to regard the group as a branch of the Vermes (Journ. Anat. et Physiol. xviii. 124–161); and Friele gives in a memoir a full description of the Buccinidæ collected by the Norwegian Arctic Expedition.

Myriopoda.—The late Prof. F. M. Balfour's posthumous paper on the Anatomy and Development of *Peripatus*: the material which he left (MSS., drawings, and preparations) was worked up by Prof. H. N. Moseley and W. A. Sedgwick, and published in the Quart. Journ. Micro. Science.

Arachnida.—The mechanism and movements of respiration of Arachnida have been investigated by M. Jules Macleod; and, as one result of his inquiries, he agrees with Lankester as to the homologies between the lungs of arachnids and the gills of *Limulus*; but he thinks that their metamorphosis admits of being explained in a more simple manner than that which has been suggested by Lankester, and expounds his views on this interesting subject by means of diagrams (Bull. Acad. R. Sci. Belg. iii. 779–792). Lankester finds that a large pair of coxal glands occur in Scorpions, which, both in their structure and position, are essentially the same as those which occur in *Limulus* (Proc. R. S. 95–101).

Insecta.—F. Plateau has investigated the respiratory movements of insects (Bull. Acad. Sci. Belg. iii. 727–737); and G. Ulim has published a paper on the Parthenogenesis of the Bee, which is remarkable on account of its altogether denying the fact, apparently on the ground of well-conducted experiments (Amer. Nat. xvi. 680–1). From America we also receive a highly interesting monograph by McCook on the Honey-ants.

So much for the zoological and anatomical work on the Invertebrata. As this Society is not so much concerned with the Vertebrata, and as the past year has not been remarkable for its production of researches on them we need not travel into this principles of biology which have fallen within the limits of the past year.

Prof. Moseley's lecture before the British Association is full of interesting facts which serve to throw much new light upon the processes of organic evolution; and the same remark applies, though in a lesser degree, to Prof. Forel's paper on Pelagic Faunæ of Freshwater Lakes (Centralbl. ii. 299–305).

The curious question of Symbiosis continues to be discussed. Prof. Lankester opposes the views of Brandt and Semper that the green corpuscles in the cells of *Spongilla fluviatilis* and *Hydra viridis* are parasitic unicellular algæ, but accepts their views on this point (with some reservation) so far as the yellow cells of Anthozoa and Radiolarians are concerned (Quart. Journ. Micro. Sc. xxii. 229–254). It is evident that an important field of inquiry is opened up, should it be definitely proved that the green colouring-matter in question is due, as Lankester believes, to the presence of chlorophyll. Later in the year, O. Hamann published a paper supporting the view of symbiosis (Zeitschr. f. wiss. Zool. xxxvii. 457–464), to which Lankester has replied in 'Nature' (xxvii. 87–8).

Metschnikoff has published a paper (Zool. Anzeig. v. 310–316) describing certain physiological processes which he has observed to take place under suitable experimental conditions in the endodermal cells of a hydroid parasite, and which he deems himself justified in regarding as processes of intracellular digestion. He also argues that similar processes are in all probability the general rule among Turbellaria and Cœlenterata. This is clearly a most promising field for further inquiry.

Finally, allusion may be made to the curious experiments which were first made by Fournier in 1878, and have been repeated during the past year by Monnier, Vogt, and Volin (Compt. Rend.). These experiments consist in the production of so-called "mineral organisms," or of structures artificially manufactured out of inorganic substances which not only present the morphological appearance of organic structures, but even strangely imitate the physiological processes of growth, repair, the formation of cells, and protrusion of pseudopodia. It would certainly be premature to express a hope that these interesting researches are destined to throw any light upon the formation of living out of non-living material; but we may at least say that they are the most promising researches in this direction which have hitherto been made, seeing that they refer to the almost unexplored department of chemistry which deals with colloids—out of which life must have arisen if it has been evolved, and that they have at any rate been successful in breaking down one of the chief distinctions between organism and anorganism; for, in the words of Dr. Volin's paper, "we can no longer say that only living things grow, unless we reckon these as living."

During the year three more volumes of Reports of H.M.S. 'Challenger' Expedition have been published, comprising:—the Report on the Anatomy of Petrels, by the late W. A. Forbes; the Report on the Deep-sea Medusæ, by Prof. Häckel; the Report on the Holothuroidea, by Hjalmar Théel; the Report on the Ophiuroidea, by Mr. Lyman; the Report on the Marsupials, by Dr. Cunningham; the Report on the Actiniaria, by Prof. R. Hertwig; and the Report on the Tunicata, by Dr. Herdman.

## OBITUARIES.

**FRANCIS MAITLAND BALFOUR** was born Nov. 10, 1851, at Whittinghame, Haddingtonshire, N. B., entered Harrow School in January 1865; and during the last three years he spent there he eagerly availed himself of every opportunity of practical work in biology, dissecting specimens of all the types he could meet with. He neglected no part of comparative anatomy; but in so large a subject, much was necessarily derived from books. He took great interest in the School Scientific Society; and an essay written by him then was esteemed so meritorious as to be submitted to Prof. Huxley.

In October 1870 he entered at Trinity College, Cambridge; and in March 1871 he was elected Natural Science Scholar. Largely aided and directed by Dr. Michael Foster, Balfour attached himself at once to the study of animal morphology; and having obtained his degree of B.A. in the Natural History Tripos in December 1873, he proceeded to Naples, to work in the newly established station. The results of these labours were apparent in his Monograph on the Development of the Fins of Elasmobranch Fishes in 1878, and in many detached papers.

In October 1874, Balfour was elected to a Natural Science Fellowship at Trinity; and in the following year he delivered a short course of lectures on embryology. He continued his lectures in successive years to a constantly increasing number of students. His great work, on Comparative Embryology, saw the light in 1881, in two volumes 8vo; and immediately the second volume had passed through the press he started, at Christmas 1881, for Messina. On his return home he was struck down by typhoid fever, which, however, speedily left him. In 1882 a special chair of Animal Morphology was created for him in his own University; but he was unhappily not fated long to occupy it. In July last he started for his holiday amongst the Alps; and all scientific Europe was inexpressibly shocked to hear of his death on July 19, 1882, whilst attempting the ascent of the Aiguille Blanche from Courmayeur, with one guide. But the details of the accident must remain ever unknown.

Of the loss which science has sustained, an eloquent tribute has been paid elsewhere (Nature, Aug. 3, 1882, p. 314). He was elected Fellow of the Linnean Society Dec. 2nd, 1875, of the Royal Society in 1878, and was placed on the Council of that Society in 1881, receiving also one of the Royal Medals. The University of Glasgow conferred the degree of LL.D. on him; he was also General Secretary of the British Association at York, and President of the Cambridge Philosophical Society.

DR. GEORGE DICKIE, born in Aberdeen, November 23, 1812, died July 15, 1882, also at Aberdeen. Educated in Aberdeen at school and at Marischal College where he graduated A.M. in 1830; studied medicine in Aberdeen in 1831 and 1832, and in Edinburgh in 1833 and 1834, and gained the Medal for a knowledge of Pathology and Practice of Physic. In 1832 became M.R.C.S. of London; lectured on Botany in King's College, Old Aberdeen, from 1839 to 1849, and also for shorter periods on Materia Medica and on Natural History in that University. In 1842 received from the University the degree of M.D. In 1849 he was appointed Professor of Natural History in Belfast, and had there to teach zoology, geology, physical geography, and botany. In 1860 was appointed Professor of Botany in the University of Aberdeen, and held the professorship till 1877, when he resigned because of ill-health.

In his earlier life he was a keen observer in the field, and explored the district around Aberdeen, adding several species (e. g. *Carex leporina*, *C. rupestris*, and a number of Cryptogams) to the British Flora, some of them new to Science. He had a very severe illness in 1861, and was thereafter unable to do much outdoor work, being more or less an invalid from bronchitis and progressing deafness.

His separate works were 'A Flora of Aberdeen' (1838), 'The Botanist's Guide to the Counties of Aberdeen, Banff, and Kincardine' (1860), and 'A Flora of Ulster' (1864)—in all which is valuable information on the range in distribution and in altitude of the plants of the districts treated of. He also wrote along with Dr. McCosh 'Typical Forms and Special Ends in Creation,' dwelling on the evidences of design that can be discovered in the Universe; and he supplied information in the form of botanical appendices to the works of certain Arctic travellers, and to Macgillivray's 'Natural History of Deeside.' In scientific Magazines his first paper appeared in 1837; and from that time onwards he wrote in the 'Magazine of Zoology and Botany,' the 'London Journal of Botany,' the 'Annals and Magazine of Natural History,' the Reports and Transactions of the Edinburgh Botanical Society, the British-Association Reports, and the Journal of the Linnean Society, as well as contributed information acknowledged in Harvey's 'Phycologia Britannica,' Ralfs's 'British Desmidieæ,' Smith's 'British Diatomaceæ,' &c.

He also contributed numerous papers to the Philosophical

Society of Aberdeen, and to the Natural-History and Philosophical Society of Belfast.

His earlier articles mostly deal with Vegetable Morphology and Physiology, especially reproduction in plants. In 1844 he first wrote on Algæ, but gradually devoted his attention more and more entirely to this group, and for some years almost restricted it to Algæ. In his knowledge of marine species he had few equals. He also wrote on zoological subjects on several occasions. In 1838 he joined the Edinburgh Botanical Society, in 1863 the Linnean Society, and in 1881 the Royal Society of London. He was also a member of the Société des Sciences naturelles de Cherbourg, and of several local Societies for the study of science. In private life he was much liked by his friends, and as a teacher by his students, being most willing to assist in any way any student of Science, more especially of Botany.

**William Alexander Forbes**, born at Cheltenham on June 24, 1855, was the second son of Mr. J. S. Forbes, Chairman of the London, Chatham and Dover Railway. He was educated at Kensington School and Winchester College. Leaving the latter in 1872 he spent a year at Aachen studying German, and then entered the University of Edinburgh. In 1875 he came to London, and was induced by his friends to proceed to Cambridge; entering at St. John's College as undergraduate, he was afterwards elected Scholar; took his B.A. in 1879 with a first class in the Natural-Sciences Tripos; and was subsequently elected a Fellow of his College. In the same year he was unanimously chosen Prosector to the Zoological Society, vacant by the death of Prof. Garrod. During the three following Sessions of the Zoological Society he amply verified the predictions that had been uttered as to his fitness for the post. In 1880 he travelled to Pernambuco in Brazil, and in 1881 he went to America. In July 1882 he left England for a journey into Africa, but fell a victim to dysentery on January 14, 1883, at Shonga, a station on the Niger. He published about sixty memoirs and papers on various points of scientific interest.

**George Stacey Gibson** was born at Saffron Walden in Essex on 20th July 1818, and died at the Temperance Hotel, Bishopsgate, after some weeks' illness, on 5th April 1883, and was buried at his native place. He was elected Fellow of the Society in 1847; and having paid considerable attention to the botany of his native county, he published a Flora of it in 1861. This work was one of the first to call attention to the local labours of the pre-Linnean botanists, and gave impetus to the system of collecting all possible information, past and present, of the plants occurring in definite districts. This book was Mr. Gibson's chief contribution to scientific literature; but his sympathies were very wide; and his gifts in charitable objects were large and frequent, nor were they restricted to his own locality.

**ROBERT HUDSON** was the son of the Rev. L. William Hudson, and born in 1802 at Clapham, Surrey. He was elected Fellow of our Society in 1848, and F.R.S. in 1834. Although he was actively engaged as a timber merchant, he found time to devote to his duties at the Council of the Zoological Society, so that a *silver* medal was awarded to him for his valuable services. He died at Bournemouth February 9, 1883, aged 81.

**WILLIAM JAMESON** was born at Leith in 1815, was educated at the High School, Edinburgh, and received his medical training at the University, where his uncle, Prof. Robert Jameson, filled the chair of Natural History from 1804 to 1854.

In August 1838 he was appointed to the Bengal Medical Service, proceeded to Calcutta; and soon after his arrival he was called upon to act as Curator of the Museum of the Asiatic Society, a temporary duty which he discharged with great ability. Shortly afterwards he was moved to Cawnpore, and then to Amballa, at the latter place being Civil Surgeon in 1841. In 1842 he was appointed Superintendent of the Botanic Garden at Saharunpore in place of Dr. Falconer, then seriously ill. Whilst here he embarked upon his grand project of tea-cultivation in British India, under the auspices of Lord Dalhousie, Governor-General; and before his death he had the satisfaction of seeing that culture one of the staple industries on the lower Himalaya. In December 1875 Mr. Jameson retired from his post at Saharunpore to a small estate at Deyrah Doon; and there he died on 18th March 1882, leaving a widow and two sons. A full list of his writings will be found in the Proc. Soc. Bot. Edinb. (1882).

**JOHN DILLWYN LLEWELYN**, of Penllegare, was born 10th January, 1810, and died at his home at Wimbledon on August 24, 1882, aged 72. He was the eldest son of the late Lewis Weston Dillwyn (co-author with Dawson Turner of the 'Botanist's Guide'), and was also one of the senior Fellows of the Royal Society. His election into the Linnean Society took place May 3, 1831.

**MATTHEW MOGGRIDGE** was born July 16, 1803, and died in London, July 14, 1882. He married on April 19, 1836, Fanny, eldest daughter of Lewis Weston Dillwyn, M.P. for Glamorgan, well known for his works in various branches of natural science, from whom in great measure Mr. Moggridge derived his liking for biology, his other instructor being John Dillwyn Llewelyn of Penllegare.

He never closely devoted himself to study either botany or zoology, but took great pleasure in collecting flowering plants, especially during the many winters he passed at Mentone for the benefit of his son's health. Almost all the plants figured in the 'Contributions to the Flora of Mentone' by John Traherne Moggridge, were gathered by his father, who spent much of his time in walking over the hills round Mentone for that object. In 1868 he made a summer excursion to the Col di Tenda, to inspect the inscribed rocks near Saspello, called the "Meraviglie;" and he published a pamphlet describing that journey. After his son's death in 1874 he returned to England, and constantly resided in London until his death.

**Henry Young Darracott Scott**, Major-General, Royal Engineers, was born in 1822. He entered the Royal Engineers in 1840, and retired from the active list in 1871, then becoming Director of Buildings at South Kensington, acting as Architect to the Royal Albert Hall and Science Schools, and was also Secretary to the Royal Commissioners of the 1851 Exhibition. He was elected Fellow of this Society on January 19, 1865, and of the Royal Society on June 3, 1875. He died on April 16, 1883, at Sydenham.

**George Henry Kendrick Thwaites.** When a young man, living near Bristol, he devoted all his leisure to the investigation of the lower organisms. In 1841 he began to publish papers in the 'Annals of Natural History;' and previously to that his reputation as a biologist was such that he was employed by Dr. Carpenter to revise the second edition of the 'Principles of Physiology,' the standard book of the time on its subject. He paid special attention to the freshwater algæ, and was in constant correspondence with the chief English and foreign cryptogamists of the day. His discoveries in this group were notable, and were embodied in papers in the 'Annals' for 1846 to 1849. Of these the most important was on the discovery, in 1847, of the fact that the Diatomaceæ (then considered animals) were true algæ—an immense step forward in our knowledge of these minute organisms, which finally settled their position in nature; and his papers generally, though few and dealing with special points, were of that kind which point out the way to important generalizations. They gave him a European reputation. In 1846, the great French cryptogamist, Montagne, dedicated to him a genus of zygnematous algæ, *Thwaitesia*.

At this period Thwaites was a lecturer on botany at the School of Pharmacy in Bristol, and afterwards at the Medical School there; and in 1847 he became a candidate for a chair of Science in one of the new Queen's Colleges in Ireland. This application was powerfully supported by such men as Robert Brown, Sir W. Hooker, Lindley, Montagne, Tulasne, and many others; but it was unsuccessful; and when Dr. Gardner's death, in March 1849, became known at home, the vacant post in Ceylon was offered by Earl Grey to Thwaites.

With his arrival in Ceylon commenced a new stage in Mr. Thwaites's scientific life. He at once turned his attention from the lower organisms to the varied and beautiful phanerogamic flora of the island. At that time the duties of the Superintendent were almost wholly of a scientific character, and he was undisturbed by other claims on his time. For the first ten years of his incumbency Thwaites was able to devote himself exclusively to the investigation of the flora of Ceylon. His predecessor, Dr. Gardner, was an indefatigable traveller, and had made large collections, both in South America and India as well as Ceylon; and his sudden death had left every thing in confusion. The first work of Thwaites was to separate the Ceylon plants from the others; for all were mixed together. Gardner's collections were to be sent home and sold on behalf of the family by auction in London, and little was retained at Peradeniya. After this work was finished, the sorting, arranging, and naming of the stores, accumulated and continually being brought in from the jungles and mountains, was proceeded with, and Thwaites made numerous excursions collecting. During this period a number of interesting novelties were detected, principally in the districts of Ambagamua, the neighbourhood of Ratnapura, the Singhe Rajah Forest, and other parts of the wet south-west of the island. Many of these were described by Thwaites in a series of papers published in Hooker's 'Journal of Botany' from the year 1852 to 1856, wherein some 25 genera new to science were defined and illustrated, most of them peculiar to Ceylon. These papers are characterized by the terse accuracy noticeable in all the writings of their author. At the same time Thwaites worked indefatigably at forming a numbered series of Ceylon plants from the stores of unarranged specimens in the herbarium and those collected under his own direction. Numerous sets of these series were made up and widely distributed among the principal herbaria and museums in Europe in exchange for other dried plants, or for botanical books; and in the course of a few years Ceylon plants for the first time began to be generally well represented in collections.

In 1857 the title of Superintendent was altered to Director; and in the next year was commenced the publication of the book by which Thwaites is most widely known, and up to the present time is the only modern catalogue of the indigenous plants of Ceylon. This book, the 'Enumeratio Plantarum Zeylaniæ,' was printed in London at the risk of a publisher there, and received no assistance whatever from the Government. This important work first reduced into order the chaotic state of knowledge and the confusion in nomenclature of our flora. In its preparation Thwaites was greatly assisted by Dr. (now Sir) J. D. Hooker. The 'Enumeratio' is, of course, essentially a botanists' book, and is of use to them only; descriptions are given only of the new species, which are very numerous, and these in Latin; for other plants references are made to various books, thus presuming an access to a good library. Dr. Thwaites never regarded it as other than a "prodromus" or forerunner of a full descriptive and illustrated work; but the latter could of course never be undertaken unless large help from Government were forthcoming.

The publication of this book secured its author's reputation as a systematic botanist; and acknowledgments of this were received from several quarters. In Germany the Imperial Leopoldo-Carolinian Academy granted the honorary degree of Ph.D. to the author; and a far more gratifying and substantial honour was his election into the Royal Society. The customary compliment of dedicating a genus to a naturalist of repute had, as already noticed, been long before bestowed upon Dr. Thwaites; but the obscure little alga *Thwaitesia* was supplemented in 1867 by the foundation by Dr. J. D. Hooker of *Kendrickia*, this name being given to one of our most beautiful Ceylon flowering plants, of the order *Melastomaceæ*, and which had been referred in the 'Enumeratio' to the purely Malayan genus *Pachycentria*. A very poor figure has since been published by Beddome of this splendid epiphytic climber, which he found to grow also in the Anamallay hills.

It had always been Dr. Thwaites's intention to publish a further part of the 'Enumeratio;' but this he never accomplished. Indeed, after this time he devoted himself almost entirely to the cryptogams, returning thus to his first love. He worked out and arranged all the Mosses, Fungi, and Lichens, making them up into numbered sets in the same manner as the flowering plants. Dr. Thwaites did not, however, himself publish the result of so much labour, but submitted his collections, drawings, and notes to specialists at home. The new mosses were brought out by Mitten in 1872, the corticolous Lichens by Rev. W. A. Leighton in 1870, and the Fungi by Rev. M. J. Berkeley and Mr. Broome in 1870, 1871, and 1873. These botanists all acknowledge the great help they derived in their work from the labour already expended on it by Dr. Thwaites. Mr. Mitten remarks on the new mosses—"As many of the species had already been clearly distinguished by Dr. Thwaites, it has been arranged that our joint names should be attached to them, which appears to me a very small tribute to the energy with which he has investigated the flora of Ceylon." With the exception of a short note, printed in 1877, on Schwendener's then recently propounded theory of the nature of Lichens, which Dr. Thwaites could not accept, he contributed nothing further to botanical literature.

A sufficient reason, apart from advancing age, for this partial cessation from scientific activity, is to be found in the steadily increasing change in the character of his official position: the scientific officer was becoming more and more forced to address himself to the application of botanical knowledge to practical agriculture. Dr. Thwaites had never neglected this, witness the foundation of Hakgala cinchona-nurseries in 1860–61; but he now threw himself into the new and less congenial work with as much enthusiasm as could be expected. In his annual reports of the Gardens there will be found much information on vanilla, cinchona, tea, cardamoms, cacao, Liberian coffee, and other cultivations, all of which he at different times urged upon the attention of planters. Though but little heed was paid at the time to these recommendations, Dr. Thwaites lived to see them all adopted, and these various products become of very great interest to the colony. In connexion with this change, it is natural to refer to the coffee-leaf disease. It was in 1869 that Dr. Thwaites's attention was first called to this; and it was from specimens sent by him in that year to the Rev. M. J. Berkeley that *Hemileia vastatrix* was described. His views as to the character of the disease will be found in his reports from 1871 to 1874 (which were reprinted in 1879, with additional observations), and in a final letter to Government so recently as January 1880. Though his scientific views underwent considerable change during these years, and some expressions in his later utterances cannot be scientifically justified, he consistently maintained in all his published remarks, in spite of much unpopularity and opposition, the inutility of external "cures," and the paramount necessity of enabling the trees to bear the disease by liberal cultivation, the use of manure, &c., if any sufficient crop was to be matured.

After the acceptance by Mr. Morris, his assistant, of a superior post, Dr. Thwaites resigned his appointment in February 1880, when he retired on a well-earned pension.

Having a great disinclination to leave the colony after so long a residence there, he purchased the pretty bungalow of Fairieland above Kandy, where he quietly passed his time in the cultivation of his garden and the reception of his friends. His death occurred somewhat suddenly in the night of the 11th September, in Kandy, whither he had proceeded *en route* for the sea-coast for the restoration of his health, which had for a few weeks been indifferent. His funeral was attended by many Kandy friends, including his successor at Peradeniya, and nearly all the staff and labourers of the Gardens which he had directed for so many years.

Thwaites was a naturalist pure and simple, by temperament, by long habit and determination. He never attempted any other character than the *savant*, which was his by right; and he had a perfectly genuine contempt for the "popular scientists" of the day. A keen and accurate observer, of great industry, quietly enthusiastic, and with reasoning capacities of a high order, he possessed many of the attributes which go to make a philosopher and man of science of the first rank. Though he published comparatively little, he was an elegant and fluent writer, and his large correspondence with botanists was carried on in the most admirable manner. Perhaps amongst eastern botanists, many of whom were accustomed to consult him in difficult cases, it is as a letter-writer that he will be best remembered. Ever ready to help where he knew that help would be well and properly bestowed and appreciated, he spared no time and trouble in the investigation of points referred to him; he was also most liberal in the distribution of his specimens and his stores of information in quarters he deemed suitable. Nor was it only in botanical science that he was so helpful to others; he was an ardent entomologist, and collected most extensively, paying special attention to the habits and life of insects. His notes on the families of butterflies in Moore's 'Lepidoptera of Ceylon' are the best part of the text of that disappointing volume. He early adopted the views of Charles Darwin, and announced his adhesion to them in the preface to his 'Enumeratio' (1864); and though he never revisited Europe, he kept, till the last three or four years, well on a level with scientific progress. He leaves behind a worthy reputation as a diligent and conscientious servant of the State and a very successful student of nature.

The following Notice has been drawn up since the Anniversary:—

Wilhelm Carl Hartwig Peters was born at Koldenbüttel, Schleswig, on April 22, 1815. He studied at Copenhagen and Berlin, and at the latter place he began his long list of scientific papers in Müller's 'Archiv' in 1837, contributing to the same periodical five other papers up to 1842.

By recommendation of Alex. von Humboldt, Johann Müller, Lichtenstein, and Carl Ritter, and under the patronage of King Friedrich Wilhelm IV., he undertook the scientific journey to Mozambique, Zanzibar, Madagascar, and the East Indies which is so well known.

He returned to Berlin in 1848, having collected largely, and transmitted specimens and communications of high value to various German periodicals whilst abroad. He became Secretary to the Berlinische Gesellschaft naturforschender Freunde, and actively advanced its interests. On the death of Lichtenstein in 1857, he succeeded to his post as Director of the Zoological Museum in Berlin, which he held to his death, on April 21st, 1883. The Fishery Exhibition held in that city in 1881 was much aided by his very extensive knowledge and active help.

He was a copious writer on very many groups, but more particularly devoted himself to the Vertebrates. The 'Catalogue of Scientific Papers' contains a list of 245 papers by him; but the total number exceeded three hundred. Many will be found in the 'Proceedings' and 'Transactions' of the Zoological Society; perhaps the most noteworthy being a short memoir on *Pectinator Spekii*, a remarkable rodent from North-eastern Africa, which was published in the seventh volume of the 'Transactions' of that same body in 1872. His most important work was the issue of his 'Naturwissenschaftliche Reise nach Mossambique:' vol. i., containing Mammalia, came out in 1852, with 46 plates; a second folio, Insects and Myriopods, with 35 plates, in 1862; and a third volume, in February 1882, with 33 plates, devoted to Amphibia. The Botanical portion was worked up by various authors and published in 1862–64. These are the only portions which have seen the light.

He was elected Foreign Member of the Zoological Society in 1860 and of the Linnean Society in 1868. His death creates a gap in the ranks of German naturalists which will long be felt in the scientific world, as well as by his large circle of friends. He has left behind him a widow and several children to deplore his loss.

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Stirling, J., elected, 6.
Stone, H. C., elected, 3.
Stone, J. N., elected, 2.

Tasmanian plants near Adelaide (Tepper), 3.
*Tegenaria Guyonii* (Campbell), 5.
*Temecarpus*, 2 (read *Semecarpus*).
Tepper, J. G. O., *Beyeria opaca* leaves malformed, 2; Lerp insect, 6; Tasmanian plants near Adelaide, 3.
Teratological notes (Ridley), 12.
Termites, Rangoon (Romanis), 13.
Testis of *Limulus* (Benham), 14.
Thomas, A. P. W., on liver-fluke, 1.
Thomson, Prof. A., motion by, 10; Scrutineer, 10.
Thunberg, *Selagineæ* of (Rolfe), 13.
Thurston, Hon. J. B., elected, 8.
Thwaites, G. H. K., deceased, 9; obituary, 43.
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*Tomocerus*, British species of (Brook), 3.
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Towndrow, R. F., new var. of *Rosa stylosa*, 6.
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Vertebrates, cerebral homologies in (Owen), 3.
*Vicia Orobus* from Somerset (Murray), 3.

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Walsingham, Lord, elected, 1.
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Wyatt, Rev. P. W., elected, 6.

Zoological report, 38–39.

**OCTOBER 1886.]** **[Price 4s.**

# PROCEEDINGS

8497
Oct. 8. 1887.

OF THE

# LINNEAN SOCIETY OF LONDON.

FROM NOVEMBER 1883 TO JUNE 1886.

LONDON:

# PROCEEDINGS

OF THE

# LINNEAN SOCIETY OF LONDON.

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## (SESSION 1883–84.)

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### November 1st, 1883.

**Frank Crisp**, LL.B., Treasurer and Vice-President,
in the Chair.

The Minutes of the last Meeting were read and confirmed.

Thomas Edward Gunn, Esq., and Alexander Hutton, Esq., were elected Fellows.

A letter from Dr. John Evans, Treas. R.S., enclosing the following, was read by the Secretary, and the papers referred to (which are printed in the Appendix) laid before the Meeting:—

"Holywell Hill, St. Albans, Herts.
October 29th, 1883.

"Sir,—

We, the undersigned, descendants of the well-known botanical artist, George Dionysius Ehret, have the honour to offer for the acceptance of the Linnean Society the accompanying letters, seven of which were addressed to Mr. Ehret by the great Linnæus between 1736 and 1769, and the remaining four are either translations of letters from Linnæus or connected with botanical subjects.

"We offer these letters to the Linnean Society in the full belief that they will, in your Society's Library, be most fitly preserved and be at the same time most generally accessible to those interested in the history of the great naturalist after whom your Society is named.

"We append a short memoir of George Dionysius Ehret, together with a brief genealogical statement showing our descent from him, from which it will at once be seen how directly these letters have come down into our hands.

"We also add a list of the letters, and trusting that they may be acceptable to the Linnean Society,

"We have the honour to be,
"Your obedient Servants,
"SOPHIA GROVER (86).
"HARRIET GROVER (83).
"EMILY GROVER (81).
"CHAS. EHRET GROVER (80)."

"*The President of the Linnean Society.*"

The Vice-President, in the Chair, having congratulated the Society on this valuable addition to the Linnean treasures, a Vote of Thanks was unanimously accorded to the Donors. (See Appendix.)

Mr. F. Crisp drew attention to specimens, in fluid medium, of *Limnocodium Sowerbii*, as illustrative of Mr. P. Squires's method of preserving delicate organisms, such as Medusæ.

A Japanese book on useful Timbers was exhibited for the Rev. Thomas Wiltshire, F.L.S.

Mr. H. Groves showed examples of *Chara Braunii* from Ashton-under-Lyne, and Mr. Arthur Bennett of *Najas alagnensis* and *N. marina* from Hickling Broad, Norfolk, all being new to the British flora.

Mr. W. Fawcett exhibited a living specimen of *Testacella Maugei*, the same being obtained in Dorset by Mr. J. C. Mansel-Pleydel and supposed to be indigenous to that county.

The following papers were read:—

1. "Observations on certain Changes in the Habits of the Fauna and Flora of New Zealand." By Dr. S. M. Curl, F.L.S.

2. "*Alnus Richardsoni*, a Fossil Fruit from the London Clay of Herne Bay." By J. Starkie Gardner. (Communicated by E. T. Gardner, F.L.S.)

3. "On the Origin of the Placenta in the Tribe Alsineæ of the Order Caryophylleæ." By Miss G. Lister. (Communicated by Arthur Lister, F.L.S.)

## November 15th, 1883.

Sir JOHN LUBBOCK, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Philip Crowley, Esq., and John Murray, Esq., were elected Fellows.

support of the observations of A. S. Œrsted, in 'Botaniska Notiser' for 1865; also examples of *Puccinia graminis* on Wheat, produced from *Æcidium* on *Mahonia Aquifolium*. The Æcidiospores were sown on the 2nd of June, 1883, the Uredospores appeared on the 10th of June, and the ripe *P. graminis* was gathered on the 10th of September, 1883. He likewise called attention to examples of *Æcidium rumicis* on *Rumex obtusifolius*, *R. Hydrolapathum*, *R. conglomeratus*, and *Rheum officinale*, the same being produced by cultivation from *Puccinia Phragmitis*.

Professor P. Martin Duncan showed a specimen of Coral (*Desmophyllum crista-galli*) which had grown upon an Electric-telegraph Cable off the shores of Spain; it possessed radicles, apparently due to the presence of a worm close beneath the base of the coral.

Mr. E. P. Ramsay exhibited a series of rare New-Guinea Birds, prominent among which were:—*Chamosyna Margaretheæ*, *Geoffroyius heteroclitus*, *Cinnyris melanocephalus*, *Myragra ferrocyane*, *Pallopus Richardsii*, and *P. Lewisii*.

Mr. T. Christy exhibited a fine living specimen of the so-called *Gastonia palmata* (*Trevesia sundaica*, Miq.), or possibly a new species.

Dr. J. Murie showed specimens of *Ascaris bicolor* from the living Walrus at the Westminster Aquarium.

Mr. F. J. Warner drew attention to a series of *Orchis incarnata* from Hampshire, remarking on the great variation of colour of the lip.

The following papers were read:—

1. "The Reproduction of the Zygnemaceæ: a Contribution to the solution of the question, Is it of a sexual character?" By Alfred W. Bennett, F.L.S.
2. "Notes on the Antenna of the Honey-Bee." By T. J. Briant. (Communicated by B. Daydon Jackson, Sec. L.S.)
3. "Japanese Liguriidæ; with notes on their habits and external sexual structure." By George Lewis, F.L.S.
4. "On the Replacement of a true Theca or Wall by Epitheca in some Serial Coralla, and on the Importance of the Structure in the Growth of Incrusting Corals." By Professor P. Martin Duncan, F.R.S., V.P.L.S.

## December 6th, 1883.

Sir John Lubbock, Bart., President, in the Chair;
afterwards R. McLachlan, F.R.S.

The Minutes of the last Meeting were read and confirmed.

H.H. The Maharajah of Travancore, G.C.S.I., Charles Albert

Barber, Esq., John Sibley Hicks, Esq., John Richardson, Esq., Ralph Tate, Esq., Rev. Hilderic Friend, Rev. James Hannington, and Henry Tisdall, Esq., were elected Fellows.

The Botanical Secretary exhibited a specimen of "Mexican Whisks," known also on the London market as "Chien-dent," which are now imported in considerable quantity from the vicinity of La Puebla, in Mexico. It is believed to be derived from a species of *Andropogon*; but it is in bulk coarser than the similar material from Southern Europe from *Andropogon Gryllus*, and finer than a species of *Panicum*, used in India for brushes.

Mr. Arthur Bennett exhibited a specimen of *Carex ligerica* gathered by Mr. Cunnack on the Scilly Isles, and believed by him to be a sterile form of *C. arenaria*, but identified as *C. ligerica* by Prof. Babington, and therefore new to Britain. Mr. Bennett also drew attention to locally so-called "Vegetable Hedgehogs," these being agglomerated Larch-leaves, having some resemblance to a rolled Hedgehog, found in the Shropshire meres.

A large number of Lepidoptera from the district of Georgetown, Colorado, and a few from Missouri, were exhibited by Mr. Ernest Jacob, who had collected them while engaged in the U.S.A. Geological Survey in the above districts in 1880–81.

A series of dried Plants from Australia was shown on behalf of Mr. James Robinson.

The following paper was read:—

1. "A posthumous Essay on Instinct." By Charles Darwin, F.R.S., F.L.S. (Communicated by J. G. Romanes, Sec. L.S.)

## December 20th, 1883.

Alfred W. Bennett, M.A., in the Chair.

The Minutes of the last Meeting were read and confirmed.

Nathaniel Cantley, Esq., William Lambert Dobson, Esq., Francis Gray Smart, Esq., and Rev. R. Thom were elected Fellows.

Mr. Stuart O. Ridley exhibited and made remarks on a series of 170 vertical sections of Sponges collected in the neighbourhood of Galle, Ceylon, by Dr. W. C. Ondaatje, F.L.S., and transmitted to England by him in letters, being in most instances sufficient for the identification of the species.

Mr. F. M. Campbell showed the cocoon of a Spider, *Tegenaria Guyonii*, which had been suspended in the centre of a pasteboard cylinder, the usual position being close to the sides of objects. The Spider itself, just ripe with eggs, was placed in the cylinder, and had adjusted itself to the surrounding conditions; the cocoon was of natural form, slung like a hammock.

The following papers were read:—

1. "On the Structure of the Stem of *Rhynchopetalum montanum*, Fresen." By F. O. Bower, M.A., F.L.S.

2. "On the Ear-bones of *Rhytina Stelleri.*" By Alban Doran. (Communicated by Professor Flower, F.R.S., F.L.S.)

3. "On the Glands of Hypericaceæ." By J. R. Green. (Communicated by Dr. S. H. Vines, F.L.S.)

4. "On the Stipular Glands of *Coprosma Baueriana.*" By Walter Gardiner. (Communicated by Dr. S. H. Vines, F.L.S.)

5. "On Starch-grains in the Lacteal Cells of *Euphorbia.*" By M. C. Potter. (Communicated by Dr. S. H. Vines, F.L.S.)

## January 17th, 1884.

Sir John Lubbock, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Arthur Stuart Pennington, Esq., was elected a Fellow.

Dr. R. C. A. Prior exhibited and made remarks on a series of useful Timbers from British Guiana. These were all hard woods, among which may be mentioned:—the "Greenheart" (*Nyctandra Rodiei*); the "Ducalibolly," a rare red wood, used in the colony for furniture; "Wamara," a very hard-wooded tree, 60 feet high, used by the natives for clubs &c.; "Letter Wood" (*Brosimum Aubletei*), useful for inlaying and making very choice walking-sticks; "Hyowa-bolly" (*Omphalobium Lamberti*), a rare tree, 20 feet high, known commercially as Zebra wood.

Mr. H. N. Ridley showed a fasciated branch of Holly from Herefordshire, in which certain of the flattened branches were curiously interwoven and each terminated by a number of growing points.

Dr. Murie called attention, on behalf of Mr. Frederick Piercy, to a presumed portrait of Linnæus in oil, doubtfully supposed to be original.

The following specimens were exhibited under the microscope, in illustration of Mr. Michael's paper:—*Disparipes bombi*, inert fully-grown nymph, showing the adult female fully formed inside; also male, female, and latter from underside of the new species *D. bombi*.

The following papers were read:—

1. "A Review of the Tuber-bearing Species of *Solanum.*" By J. G. Baker, F.R.S., F.L.S.

2. "The *Hypopus*-question, or Life-history of certain *Acarina.*" By A. D. Michael, F.L.S.

3. "The Structure and Affinity of *Sphæria pocula*, Schweinitz." By Dr. M. C. Cooke, A.L.S.

4. "Notes on some Burmese Desmidieæ." By W. Joshua, F.L.S.

5. "Contributions to South-African Botany." By Harr Bolus, F.L.S.

## February 7th, 1884.

Sir JOHN LUBBOCK, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Henry Groves, Esq., of Florence, and Frederick Lovell Keays, Esq., of Cobham, were elected Fellows.

The Vacancies in the list of Foreign Members having been announced, by the deaths of Prof. Oswald Heer, Dr. W. C. H. Peters, and Prof. Hermann Schlegel, the following Nominations were made, and the Certificates ordered to be suspended:—

ERNEST HAECKEL, M.D., Professor of Zoology, and Director of the Zoological Institute and of the Zoological Museum of the University of Jena.

Dr. ALEXANDER KOWALEVSKY, Professor and Director of the Zootomical Cabinet, and Custodian of the Zoological Menagerie of the University of Odessa.

Dr. S. SCHWENDENER, Professor of Vegetable Anatomy and Physiology, Director of the Botanical Institute, and of the Botanic Garden of the University of Berlin.

Mr. F. O. Bower showed specimens of the leaf of *Tomiea Menziesii*, with adventitious buds situated at the base of the lamina. These buds appear at the same point in all the leaves, and under normal circumstances, so that their development seems to be a constant character of the species. Their origin is exogenous, and the buds are found already present at the period when lignification of the xylem of the young vascular bundles begins. Mr. Bower compared this development with that already known in *Cardamine pratensis* and *Athyrurus ternatus*, &c,

There was exhibited, on behalf of Mr. Arthur C. Cole, a box containing mounted preparations illustrative of his 'Studies in Microscopic Science,' a work devoted to Animal and Vegetable Histology, now being issued in parts.

Mr. B. T. Lowne exhibited a series of specimens under the microscope, and original drawings, illustrating his researches on Compound Vision in Insects.

The following papers were read:—

1. "Note on the Gemmæ of *Aulacomnion palustre*." By F. O. Bower, F.L.S.
2. "On Recent Ephemeridæ or May-Flies."—Part II. By the Rev. A. E. Eaton. (Communicated by Sir J. Lubbock, Bart., Pres. L.S.)
3. "Researches on the Compound Vision of Insects." By Benjamin T. Lowne, F.L.S.
4. "European and North-Atlantic Crustacea." By the Rev. A. M. Norman, F.L.S.

### February 21st, 1884.

Sir John Lubbock, Bart., President in the Chair.

The Minutes of the last Meeting were read and confirmed.

Alfred Prentice Young, Esq., of Bombay, and D. Sullivan, Esq., of Victoria, were elected Fellows.

Mr. R. Miller Christy brought before the notice of the Society a series of Lepidoptera, Hymenoptera, &c., captured by him in Manitoba, some of the Humble-Bees being supposed new to science; he also showed a collection of dried plants obtained by him in the same region.

Mr. W. T. Thiselton Dyer exhibited and made remarks on Portions of Wreaths from the Coffin of the Princess Ugi Khomso of the XXI. Egyptian Dynasty. Dr. Schweinfurth, the African traveller, who had closely investigated these ancient garlands, reports that they are composed of leaves of a Willow (*Salix Safsaf*) and flower-heads of Cornflower (*Centaurea depressa*), with separate rayflorets and an achene of *C. depressa*, besides flowers of the Common Poppy (*Papaver Rhœas*), with separate flowers and capsules of the same plant.

The following papers were read:—

1. "The Cyperaceæ of the West Coast of Africa in the Welwitsch Herbarium." By H. N. Ridley, F.L.S.
2. "On the Power of Penetrating the Bodies of Animals possessed by the Seed of *Stipa spartea*." By R. Miller Christy. (Communicated by A. W. Bennett, F.L.S.) See Abstract in Appendix.
3. "Contributions to the Flora of North Patagonia and the adjoining Territory." By John Ball, F.L.S.
4. "On some Structures liable to Variation in the Subfamily Astrangiaceæ (Madreporaria)." By Stuart O. Ridley, F.L.S.

### March 6th, 1884.

Sir John Lubbock, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

James Dallas, Esq., and Dr. Augustus Burke Shepherd were elected Fellows; and Mr. William Hodgson, of Watermillock, Cumberland, was elected an Associate.

The President announced the receipt of a communication from the Foreign Office through the Science and Art Department, enclosing the Programme of a proposed International Ornithological Congress to be held at Vienna in the beginning of April, under the patronage of His Imper. and Roy. Highness the Crown Prince Rudolph. The subjects to be discussed are:—I. Project of an International Law for the Protection of Birds. II. On the descent of the Domestic Fowl and the steps to be taken in general for the improvement of Poultry-breeding. III. Suggestions for the establishment of a network of Stations for Ornithological Observations over the habitable globe.

Mr. F. O. Bower drew attention to a figure in the 'Gardener's Chronicle' (1st March) representing a case of proliferation of the so-called "double-needle" of *Sciadopytis verticillata*. He alluded to the various views as to the morphological value of the "double needle" and concluded that the one first propounded by Prof. Alex. Dickson (afterwards adversely discussed by Von Mohl, and favourably by Goebel) appears most in accordance with the history of its development. He remarked that if the double needle be regarded as a phylloclade with arrested apical growth, this case of proliferation may be readily explained as an example of continued apical growth, accompanied by a displacement of the normally more intense intercalary growth.

Dr. Maxwell Masters exhibited and made remarks on an example of bud-variation in *Pinus sylvestris*, observing that it was a matter of doubt whether an insect or a fungus gave rise to it.

There was exhibited for Mr. T. E. Gunn a stuffed specimen of a supposed adult male variety of the Common Moorhen (*Gallinula chloropus*) shot near Norwich last spring.

Mr. Alfred W. Bennett made some observations on the continuity of Protoplasm as exemplified in some forms of the Algæ, and demonstrated in specimens of *Ptilota* and *Callithamnion* shown by him under the microscope.

The following papers were read:—

1. "The Metamorphosis of *Filaria sanguinis-hominis* in the Mosquito." By Dr. P. Manson of Hongkong. (Communicated by Dr. T. S. Cobbold, F.R.S., F.L.S.)
2. "On Indian Species of *Cyperus*." By C. Baron Clarke, M.A., F.R.S., F.L.S.
3. "On the Relations existing between Instinct and other Vital Processes." By Professor St. G. Mivart, F.R.S., F.L.S.
4. "Notes on Afghanistan Algæ." By Dr. Jules Schaarschmidt. (Communicated by Prof. Oliver, F.L.S.)

## March 20th, 1884.

Henry T. Stainton, F.R.S., Vice-President, in the Chair; afterwards Frank Crisp, LL.B., Treas. and Vice-President.

The Minutes of the last Meeting were read and confirmed.

The Rev. Canon James Baker, William Brockbank, Esq., Robert Mason, Esq., and Edward Alfred Heath, Esq., were elected Fellows.

fying that the Ornithological Congress at Vienna will be held from the 7th to the 16th April, instead of from the 16th to 23rd April, as originally fixed.

Mr. J. G. Baker showed and made remarks on specimens of supposed hybrids between the Oxlip (*Primula elatior*) and the Cowslip (*P. veris*) from Kew Gardens.

In illustration of his paper, Lord Walsingham exhibited a large nest containing cocoons, also specimens of the insects and of the larvæ of a Congregating Moth of the genus *Anaphe*, from Natal; and he also showed a live example of a Dipterous parasite which had emerged from the same.

The following papers were read:—

1. "Contribution to the Knowledge of the genus *Anaphe*, Walker." By Lord Walsingham, M.A., F.L.S.

2. "On the Hairs occurring on the Stamens in Plants." By Greenwood Pim, F.L.S.

3. "Closure of the Cyclostomatous Bryozoa." By Arthur W. Waters, F.L.S.

4. "On the Life-history of *Æcidium bellidis*, D.C." By Charles B. Plowright. (Communicated by W. T. Thiselton Dyer, C.M.G., F.L.S.)

5. "On some Diatomaceæ from the Island of Socotra." By F. Kitton. (Communicated by Lieut.-Col. H. H. Godwin-Austen, F.R.S., F.L.S.)

## April 3rd, 1884.

Sir John Lubbock, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Mr. W. Brockbank exhibited a series of Double Daffodils, wild forms of *Narcissus Pseudo-narcissus*, which were gathered in a Welsh meadow, both the single and the double forms occurring there in every stage of growth. Sections of these double flowers revealed stamens and pistils; and in two of the most completely double forms, ovaries filled with seeds were present. With this evidence he therefore contended against the current notion of cultivation and root-growths having produced a heterogeneous multiplication of the perianth-segments, and conversion of stamens into petal-growths, his belief being that the plants in question were propagated in the ordinary way by seed.

Mr. R. Morton Middleton showed an example of a Jackdaw with such albinism of the scapulars and secondary wing-feathers as to cause considerable resemblance in the bird to a Magpie. The Jackdaw had been seen and observed for some time at Castle Eden, Durham, prior to its dying from an injury.

The following papers were read:—

1. "A Revision of the Families and Genera of the Sclerodermic

Zoantharia (the *Rugosa* excepted)." By Prof. P. M. Duncan, F.R.S., Vice-Pres. L.S.

2. "On some Pollen from Funeral Garlands found in an Egyptian Tomb, circa B.C. 1000." By Charles F. White, F.L.S.

3. "On the Anatomy and Functions of the Tongue of the Honey-Bee (Worker)." By Travers James Briant, Esq. (Communicated by B. Daydon Jackson, Sec. L.S.)

### April 17th, 1884.

ALFRED W. BENNETT, M.A., in the Chair.

The Minutes of the last Meeting were read and confirmed.

Robert Lloyd Patterson, Esq., and Benjamin Lomax, Esq., were elected Fellows.

Dr. J. Poland exhibited under the microscope a series of stained preparations illustrating the *Bacillus* of Anthrax from Man. He remarked that the *Bacillus*-spores in many instances doubtless were conveyed in the dried skins and hides imported from abroad; and that these spores, under favourable circumstances, inoculated those handling the dried hides, &c., afterwards developing in the usual manner in the human body, and setting up the severely fatal malady in question.

Dr. R. C. A. Prior drew attention to specimens of the Yellow Alpine Whitlow Grass (*Draba aizoides*) obtained by Mr. T. B. Flower from the neighbourhood of Pennard Castle, Swansea, one of the few localities where this plant grows wild in England.

The following papers were read:—

1. "Contributions to the Ornithology of New Guinea.—Part IX. On further collections made by Mr. A. Goldie in the Astrolabe Mountains." By Mr. R. Bowdler Sharpe, F.L.S.

2. "On the Algo-Fungal-Lichen Theory, and Schwendenerian Hypothesis." By the Rev. J. M. Crombie, M.A., F.L.S.

3. "Note on a Remarkable Variegation of *Banksia marginalis*, Cav." By J. G. Otto Tepper, F.L.S. (See Appendix.)

4. "On *Hyalocalyx*, a new Genus of Turneraceæ from Madagascar." By R. A. Rolfe, Esq. (Communicated by Prof. Oliver, F.L.S.)

### May 1st, 1884.

Prof. P. MARTIN DUNCAN, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

The Chairman nominated Mr. H. T. Stainton and Mr. T. Christy as Auditors, on behalf of the Council, and Mr. Jenner Weir and Dr. J. Miller, on behalf of the Fellows, and by a show of hands they were duly elected.

William Denison Roebuck, Esq., and Frederick Newton Williams, Esq., were elected Fellows.

Professor Ernest Haeckel of Jena, Professor Alexander Kowalevsky of Odessa, and Professor S. Schwendener of Berlin were elected Foreign Members.

Mr. Stuart O. Ridley exhibited drawings of the spiculation of some Sponges collected and forwarded by Dr. William C. Ondaatje, F.L.S., of Ceylon, sections of which had been shown at a previous Meeting of the Society (20th December, 1883). Mr. Ridley also exhibited and made remarks on certain other highly finished coloured sketches of Ceylonese Actiniæ drawn from life under the superintendence of Dr. Ondaatje.

Prof. F. Jeffrey Bell afterwards pointed out the chief characteristics of a set of drawings of Comatulids, taken from the living objects as obtained by Dr. Ondaatje from the seas of Ceylon.

Mr. T. Christy showed an example of the so-called "Vegetable-Fur."

Among other exhibitions were dried plants in illustration of Mr. Rolfe's paper, and birds of that of Mr. Sharpe; while Mr. Brook had under the microscope preparations demonstrating the segmentation-stage, the embryonic shield, and commencement of keel, the early embryo (3rd day) before closure of the blastopore, and of the 4th-day blastopore, with Kupffer's vesicle, also at the 8th day; and the newly hatched embryo of the Weever-fish (*Trachinus vipera*).

The following papers were read:—

1. "On a Collection of Birds from the Bahr-el-Ghazal Province and the Nyam-Nyam Country in Equatorial Africa." By R. Bowdler Sharpe, F.L.S.
2. "On the Fauna of the Philippine Islands and its probable Derivation." By R. A. Rolfe, Esq. (Communicated by Prof. Oliver, F.R.S., F.L.S.)
3. "Preliminary Account of the Development of the Weever-fish (*Trachinus vipera*)." By George Brook, F.L.S.

### May 24th, 1884.

### *Anniversary Meeting.*

Prof. P. MARTIN DUNCAN, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Mr. H. T. Stainton, on the part of the Audit Committee, read the Annual Receipts and Payments, as shown on p. 12.

The Treasurer, Mr. Frank Crisp, then submitted a detailed explanation of the various items in the foregoing statement, calling special attention to the alterations and improvements

### *Receipts and Payments of the Linnean Society from May* 1, 1883, *to April* 30, 1884.

| *Receipts.* | | | | £ | s. | d. |
|---|---|---|---|---|---|---|
| ters' on 1st May, 1883 | | | | 514 | 8 | 7 |
| stments | | | | 167 | 16 | 7 |
| | | | | 258 | 0 | 0 |
| ntions | | | | 1162 | 16 | 0 |
| | | | | 300 | 0 | 0 |
| tions :— | | | | | | |
| ctions | £202 | 16 | 7 | | | |
| ls | 85 | 6 | 8 | | | |
| dings and Catalogues | 4 | 2 | 3 | | | |
| | | | | 292 | 5 | 6 |
| | | | | 75 | 0 | 0 |

| *Payments.* | | | | £ | s. | d. |
|---|---|---|---|---|---|---|
| Taxes and Insurance | | | | 14 | 8 | 9 |
| Repairs and Furniture | | | | 275 | 10 | 8 |
| Coals and Gas | | | | 62 | 18 | 3 |
| Salaries and Commission | | | | 335 | 14 | 0 |
| Library :— | | | | | | |
| Books | £195 | 3 | 8 | | | |
| Binding | 64 | 9 | 2 | | | |
| | | | | 259 | 12 | 10 |
| Expenses of Publications :— | | | | | | |
| Printing | £542 | 1 | 7 | | | |
| Illustrations | 403 | 15 | 5 | | | |
| Distribution | 53 | 1 | 3 | | | |
| | | | | 998 | 18 | 3 |
| Miscellaneous Printing and Stationery | | | | 32 | 6 | 2 |
| Petty expenses (including Tea and Postage) | | | | 67 | 7 | 0 |
| Investment of Compositions | | | | 400 | 0 | 0 |

effected in the Entrance-hall and Meeting-room, and to the painting and decoration of the Meeting-room, Hall, and Stairs.

Mr. C. J. Breese, in congratulating the Treasurer and the Society on the favourable Report of the Finances, added that he should have been glad to have seen mention of the nature and extent of the Investments as a whole.

The Treasurer replied that his statement had been drawn out in accordance with those of former years; but agreed that on future occasions the amount of Investments should be stated on the face of the Annual Financial Statement.

Attention having been directed by Mr. Thomas Walker to the Ventilation of the apartments:—

Mr. T. Christy stated that, as a member of the Committee deputed by the Council to superintend the alterations and painting when in progress, the subject of ventilation had been duly taken into consideration. Two openings had been driven through the west wall of the Meeting-room to the open air, and also a very large aperture over the doorway into the Hall. The window over the Hall Entrance-door had also been hinged, and, when open, admitted a current of air.

The Secretary then read his Report of the deaths, withdrawals, and elections of new Fellows for the past year, as follows:—

Since the last Anniversary 17 Fellows had died, or their deaths had been ascertained, viz.:—

### Fellows (17).

Professor J. Hutton Balfour.
The Duke of Buccleuch.
Thomas Hughes Corry.
Dr. Ralph Barnes Grindrod.
John Elliot Howard.
Joseph Milligan.
Edward Milner.
Dr. John Jardine Murray.
Dr. Robert Briscoe Owen.
Sir Arthur Scott, Bart.
Edward Sheppard.
Peter Squire.
Thomas Tingle.
Professor Allen Thomson.
William Valentine.
Joseph Wainwright.
Dr. Samuel Wright.

### Foreign Members (3).

Dr. George Engelmann.
Dr. Oswald Heer.
Dr. Hermann Schlegel.

During the past official year 5 Fellows had withdrawn, viz.:—

Dr. James Brogden.
M. César Chantre.
John Goucher.
Dr. H. T. K. Kempton.

And 36 Fellows, 3 Foreign Members, and 1 Associate had been elected.

During the past year there had been received as Donations to the Library 93 volumes and 200 pamphlets and separate impressions of memoirs. From the various Scientific Societies there had also been received 150 volumes and 109 detached parts; besides 27 volumes obtained by exchange and donation from the Editors of independent periodicals. The Council, at the recommendation of the Library Committee, had sanctioned the purchase of 150 separate volumes and 50 parts of important works. The total additions to the Library were therefore 413 volumes and 359 separate parts. (For private Donations, see Appendix.)

The Chairman (Vice-President) called attention to a picture in oil, from a photograph, of the late Lady Smith (wife of Sir James Smith, our first President) taken in her 100th year, and considered very characteristic. This portrait Mr. Henry Stevenson, F.L.S., now presented to the Society for its acceptance. A Vote of Thanks was passed for this Donation.

Reference was also made to the Letters of Linnæus and Ehret already formally presented to the Society at an earlier Meeting in the current Session. (See p. 1.)

The Secretary, on behalf of the President, having read the Bye-Laws governing the elections,—

The Vice-President, in the Chair, then opened the business of the day, and the Fellows proceeded to ballot for the Council and Officers.

The Ballot for the Council having closed, the Vice-President in the Chair, appointed Mr. Grut, Mr. Hopkinson, and Mr. Breese, Scrutineers. The votes having been counted and reported to the Vice-President in the Chair, he declared the following Members to be removed from the Council, viz.:—Mr. Alfred W. Bennett, Prof. T. Spencer Cobbold, Mr. Frank Darwin, Mr. Henry E. Dresser, and Sir J. D. Hooker;—

And the following to be elected into the Council, viz.:—Prof. I. Bayley Balfour, Mr. William Carruthers, Mr. W. T. Thiselton Dyer, Lieut.-Col. Godwin-Austen, and Mr. W. Percy Sladen.

The Ballot for the Officers also having closed, the Vice-President, in the Chair, nominated the same Scrutineers. The votes having been counted and reported to the Vice-President, in the Chair, he declared the result as follows, viz.:—*President*, Sir John Lubbock, Bart., M.P.; *Treasurer*, Mr. Frank Crisp; *Secretaries*, Mr. B. Daydon Jackson and Mr. G. J. Romanes.

The Vice-President in the Chair then delivered his Address (see p. 17).

Sir J. D. Hooker then moved the following resolution, viz.:—"That the thanks of the Society be given to the Vice-President for his excellent Address, and that he be requested to allow it to be printed." This having been seconded by Mr. G. Busk, was carried unanimously.

Prof. T. S. Cobbold then moved the following resolution:—"The Fellows of the Linnean Society in Anniversary Meeting assembled desire to cordially congratulate the President on his recent marriage, and to express a hope that the union may be long and happy;" which, having been seconded by Dr. R. C. A. Prior, was carried.

Mr. Carruthers then proposed, "That a special vote of thanks be accorded to the Officers for their very valuable labours during the Session:" this, having been seconded by Mr. T. Christy, was carried.

The Senior Secretary read the Obituary Notices of deceased Fellows (see p. 31).

## June 5th, 1884.

WILLIAM CARRUTHERS, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and confirmed:—

The Chairman stated that the President nominated Mr. William Carruthers, Mr. Frank Crisp (Treasurer), Prof. P. Martin Duncan, and Mr. Henry T. Stainton to be Vice-Presidents for the ensuing year.

Mr. J. Harris Stone exhibited and made remarks on specimens and photographs, viz.:—Portion of the wood and a remarkable wart (as large as a Cocoa-nut) from the famous Dragon-Tree (*Dracæna Draco*) of the Canaries; photographs of the young Dragon-Tree planted by the Marquesa de Sawyal, and now growing on the site of the old celebrated tree of Orotava; view of the Dragon-Tree of Jcod-de-los-Vinos in Teneriffe; and of the Peak of Teneriffe, showing how the Retana grows on the Cañadas.

There was shown, on behalf of Mr. R. Morton Middleton, a small branch of *Cotoneaster microphylla* grown at Castle Eden, Co. Durham, being a good example of fasciation in this plant.

Dr. R. C. A. Prior afterwards drew attention to specimens of the rare *Potentilla rupestris* from Craig Breidhen, Montgomeryshire, and of *Rumex sanguineus* from the neighbourhood of Bristol forwarded by Mr. T. B. Flower, F.L.S.

The following papers were read:—

1. "On a Variety of *Melampyrum pratense*." By George Druce, F.L.S.
2. "On a new Genus of Recent Fungida allied to the Genus *Micrabacia*." By Prof. P. Martin Duncan, F.R.S., Vice-Pres. L.S.

3. "Influence of Wave-Currents on Fauna inhabiting Shallow Seas." By Arthur Roope Hunt. (Communicated by Dr. J. Gwyn Jeffreys, F.R.S., F.L.S.)

4. "The Longicorn Beetles of Japan." By Henry W. Bates, F.R.S., F.L.S.

5. "Remarkable Forms of *Metacrinus*." By Herbert P. Carpenter. With a Note on a Species of *Myzostoma*, by Prof. von Graaf. (Communicated by Dr. W. B. Carpenter, F.R.S., F.L.S.)

## June 19th, 1884.

Frank Crisp, LL.B., Treas. and Vice-President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Robert Carlisle Appleton, Esq., Arthur S. Atkinson, Esq., John Morley Dennis, Esq., William Hancock, Esq., and Benjamin Owen Meek, Esq., who were proposed as Fellows on the 24th May, 1884, were severally balloted for and elected.

Mr. A. G. Bourne exhibited a series of marine animals chiefly in spirit, and other examples of the new and excellent mode of preservation used in the Naples Aquarium. Species of the following genera were commented on:—*Alcyonium*, *Pleurobranchus*, *Phoronis*, *Polycyclus*, *Bonellia*, *Sigalion*, *Stylochus*, *Sipunculus*, *Asterope*, *Discocœlis*, *Tiedemannia*, *Pleurophyllidia*, *Pleurobranchæa*, *Chætopterus*, *Thysanozoma*, &c.

Mr. W. T. Thiselton Dyer showed and made remarks on several interesting vegetable products. Among these were:—(1) Spanish Barilla obtained by calcining plants of *Halogeton sativa*; (2) The Bark and Caoutchouc of *Parameria glandulifera*, a native of China; (3) *Foulkoonia floribunda*, a vine from Jamaica, yielding a useful mercantile rubber; (4) Specimens of leaves and flowers and a Necklace of the so-called "Velvet Seeds," *Quina? jamaicensis*, forwarded by Mr. Daniel Morris, F.L.S., from Jamaica; (5) Some leaves of the Chinese tree the wood of which is used for making tea-chests.

Mr. Thomas Christy afterwards drew attention to fresh examples of the Japanese Menthol plant (*Mentha arvensis*, var. *piperescens*).

There were shown, on behalf of Mr. R. Morton Middleton, two

The following papers were read:—

1. "Further Contributions to the Flora of Central Madagascar. I. Polypetalæ. II. Calycifloræ." By J. G. Baker, F.R.S., F.L.S.
2. "Notes on the Flora of Parasnath, a Mountain of N.W. Bengal," in a Letter from Mr. C. B. Clarke, F.R.S., F.L.S., to Sir J. D. Hooker, C.B.
3. "On a new Species of *Cœlacanthus* from the Yorkshire Cannel Coal." By J. W. Davis, F.L.S.
4. "Observations on a peculiar Mode of Development in the Lady Fern (*Athyrium Filix-fœmina*)." By Charles F. Druery. (Communicated by Dr. J. Murie, F.L.S.)
5. "The Morphology of *Cyclops* and the Relations of the Copepoda." By Prof. Marcus M. Hartog, F.L.S.
6. "On a new Species or forgotten Variety of *Chama*, allied to the *Arcinella* of Linnæus." By Sylvanus Hanley, F.L.S.

## ADDRESS TO THE LINNEAN SOCIETY, 1884.

By Prof. P. Martin Duncan, M.B. Lond., F.R.S., F.G.S.,
Vice-Pres. Linnean Society.

The time which has elapsed since our esteemed President asked me to occupy his position, on the present occasion, has been much too short to admit of my offering you a carefully prepared Address on any special scientific subject. I must therefore ask for your kind consideration whilst I occupy your time with some remarks upon the works of the great naturalist whose name this Society bears, and upon some of the philosophical views of De Lamarck.

Every experienced naturalist is aware that three men have especially contributed to the present state and aspect of the knowledge of Animated Nature. To name Linnæus, De Lamarck, and Charles Darwin is to confirm this statement.

The wonderful and patient labours and the elaborate theories of Charles Darwin are fresh in our memories, and are constantly being brought before every student of nature; but it is consistent with truth to assert that the merits, methods, and recorded work of the two predecessors of our great naturalist, although they cleared the path for, and even foreshadowed, existing knowledge, have too often been forgotten. I propose to bring some of the labours of these two great men before you.

I need hardly remind you that Gesner and Cæsalpinus, those diligent botanists and foreshadowers of the Natural System of Classification, formed an epoch in their science which was followed by nearly a century of slow progress, marked, however, by the collection and description of many plants from the newly discovered or lately colonized foreign lands. The method of Cæsalpinus in classifying the great groups of plants was not much cultivated: in one instance a retrogression occurred to the ancients; and in another the good work of the great Italian was mutilated and borrowed without acknowledgment. But Lobel, Ray, and Tournefort studied and wrote after a lapse of time; and the direction of their thoughts and the nature of their methods proved that the lessons of Cæsalpinus had not been forgotten. The number of plants which had been described was very considerable at that time. Genera were numerous and the great divisions were more or less recognized. But all this knowledge was in confusion when the genius of Linnæus arose. It has been well and truly said that Linnæus was the great reformer in the Classificatory Sciences; and it is evident that comparatively early in his career he grasped and elaborated the primary requirement of botanical science. He saw that a descriptive science (a branch of knowledge which compares and utilizes the idea of likeness, the most trivial as well as the most important details of which require unmistakable definition) cannot become stable, and indeed cannot advance without a descriptive language. The same word must be employed in the same sense, the same idea must be expressed by the same word, and terms must be fixed quantities.

Tournefort had comprehended the necessity for fixed terms; but, as De Candolle writes, Linnæus "really created and fixed this botanical language, and this is his fairest claim to celebrity. For by this fixation of language he has shed clearness and precision over all parts of the science."

The distinguished author of the 'Philosophy and History of the Inductive Sciences' remarks:—"The formation of an exact and extensive language for botany has been executed with a degree of skill and felicity which, before it was attained, could hardly have been dreamt of as attainable. Every part of a plant has been named; and the form of every part, even the most minute, has had a large assemblage of descriptive terms appropriated to it, by means of which the botanist can convey and receive knowledge of form and structure as exactly as if each minute part were presented to him vastly magnified. This acquisition was part of the Linnean reform."

There is no doubt that the establishment of a terminology and the reform of the descriptive part of botany were of *primary importance* to Linnæus, and that his systematic work and his vast industry in recording forms would have been impossible without those important matters which the previous generations of naturalists had barely considered.

Linnæus appears to have seen, very early in his career, that loose and popular language are incompatible with scientific precision, and that scientific phraseology must be a rigid mechanism. Hence his terminology was really the instrument by which he effected all his reforms in Natural History, and which facilitated his wonderful descriptive work.

The 'Fundamenta Botanica' supplied a great want: it gave

Botany a fixed and complete terminology, and influenced the science of Zoology also. Its far-seeing author also utilized the principle upon which the work was founded in Materia Medica, in classifying diseases, and in mineralogy.

It is very true that men labour and others enter into their labours; and in exemplification of this old saw one might ask how many of us, when we use the terms incident to the study of forms, remember that our terminology has descended from the clear-headed Linnæus. The aptitude of most of the common botanical terms testifies to the brightness of conception, the judicious taste, and the linguistic power of the great Swede.

Some naturalists imagine that a scientific terminology can be readily produced, and that it does not infer much positive knowledge. But this is a very great mistake. The accurate and vast terminology of Linnæus testifies to his practical knowledge of an enormous number of plants and animals, the details of which he must have studied carefully.

Every experienced naturalist is aware that a fixed character, to be good for anything, can only be the result of many careful observations. It is, in fact, a scientific discovery; and the appropriate technical term being given, it is capable of being used in inductive reasoning.

The language of Botany was reformed and recreated by Linnæus, who thus gave a familiar tongue to all his followers, which, once attained, leads readily to the comprehension of any descriptive and classificatory systems.

The 'Fundamenta Botanica' gives the scientific terminology, and the 'Philosophia Botanica' carries its own description—*in qua explicantur fundamenta botanica.* This work is totally positive, and is a wonderful record of the explanation of terms with very little of what Lamarck would have called philosophy. Yet there is philosophy in the book without metaphysics, and it is possible to glean therefrom the ideas of Linnæus upon the great questions which began anxiously to be thought about towards the close of the century which the great naturalist brightened.

The last-mentioned work deals, moreover, with another subject, which, although it differs from terminology and its explanation, is closely allied and dependent. It refers to Linnæus's reform of botanical nomenclature. The old plan of giving a distinct name to plants for purposes of recognition had long given way to the use of the genus and an ill-defined specific phrase. The phrase with a multitude of ablatives became really a short specific diagnosis which the botanist had to commit to memory. Haller had tried the numerical method, and had species I., II., III., &c.; but Linnæus, impressed with what he called the circumlocution, desired to call every herb by a single trivial specific name. He did not, however, do this at once.

There was one great characteristic of Linnæus, and it was *the idea of rational sequence* which pervaded his constant labours. He was never hurried; and all his reforms were progressive, and just in that order which would enable the scientific world to take advantage of and believe in them. He saw clearly enough that the trivial specific name, if it was to supersede the old-fashioned phrase, must really be associated with good and carefully recorded specific characters and satisfactory generic diagnoses.

His reform was conducted very gradually, and, first of all, in the 'Critica Botanica' rules were given for the adoption of the generic name and for the specific descriptive phrase. He clearly desired to exclude extravagant and barbarous generic names, and to adopt those which were convenient and elegant.

Then the descriptive phrase (the differentia) he decided should embrace the most fixed characters which can be found. Here the 'Fundamenta Botanica' came in, for the terminology of the phrase was regulated by its rules, and the 'Philosophia' was the glossary. He enlarged earnestly on the necessity for using the correct and proper specific phrase, and wrote :—"I beseech all botanists to avoid most religiously ever proposing a trivial name without a sufficient specific distinction, lest the science should fall into its former barbarism." In the 'Species Plantarum' the trivial names are introduced in the margin; and this tentative plan soon received the sanction of the botanical world. The phrase disappeared, and the trivial name stood next to the genus, which, with the species, was carefully diagnosed according to the Linnean method and with the selected terminology.

An ordinary botanist would not have had the proposed revolution in Botanical nomenclature accepted; but Linnæus had such a vast practical knowledge of plants, had explored the floras of such large districts and countries, had examined so many herbaria, and had had such collections sent to him from foreign countries for his study, that he stood alone in his knowledge of species. Again, his definitions of genera and species commended themselves to practical botanists. So the trivial names gradually became the recognized specific terms; and this revolution has produced lasting results in Natural History.

The 'Philosophia Botanica' contains here and there some of the sayings and maxims of Linnæus which explain his beliefs on interesting questions.

Thus we find, "Confusis generibus, confundi omnia necesse est. Genus omne est naturale, in primordio tale creatum. Species constantissimæ sunt. Species tot numeramus, quot diversæ formæ in principio sunt creatæ." "Varietas est planta mutata a causa accidentali: climate, sole, calore, ventis &c. re-

cism, for the microscope and the necessary weapons of research were incomplete and comparatively useless in his day. Any deficiency of such knowledge is compensated by the reform in the terminology, the establishment of a rational nomenclature, and the careful work of the illustrious man, whose fame amongst the general public rests alone upon the artificial system of classification he elaborated in the 'Systema Naturæ.' It is the custom to pass this classificatory system by as antiquated; but it must be remembered that Linnæus never considered it as a final work. He speaks, in the 'Classes Plantarum' (1747), of the difficulty of discovering the natural orders, and wrote:—"I, too, have laboured at this, have done something, have much still to do, and shall labour at the object as long as I live." In the 'Philosophia Botanica' he proposed sixty-seven orders as the fragments of a natural method, always professing, however, their imperfection. He stated elsewhere, "The natural orders teach us the nature of plants; the artificial orders enable us to recognize plants. The natural orders without a Key do not constitute a method; the method ought to be available without a master."

It must be remembered that at the time of Linnæus systematic botany was in its infancy. Cæsalpinus had taken the science out of the mediæval darkness and foreshadowed the post-Linnæan age. He was indeed, to use the language of Linnæus, "Primus verus systematicus;" and his system was very natural. Ray, and Jung of Lübeck, and Tournefort had written in the same direction; but their methods were difficult and could only bear fruit in after years. What was required was an easy method of distinguishing a species so that subsequent study could be directed to known forms.

When any one of the natural systems which was published after the age of Linnæus is critically examined, much of it will be found to be artificial; but there is, or ought to be, a physiological foundation which has barely a place in the artificial method. Physiological botany was in its infancy, and it was impossible to tabulate parts of the plant according to their biological value.

One thing is very certain, and it is, that if every decrier of the Linnean system, as exemplified and elaborated in the 'Systema Naturæ,' told the truth, he would admit that he had often found out the names of plants by its process, when some difficulty in the natural system intervened. It will be noticed further on that Lamarck utilized a combination of the artificial and natural methods in the 'Flore Française.'

It is remarkable how little credit is given, at the present time, to Linnæus as a zoologist. He has been overshadowed by Cuvier, Agassiz, and others; but it must be remembered that it was the application of a correct and rigid terminology to a classification, parts of which are in constant use at the present day, that enabled the science to make its great strides after the time of the great Swede. It is interesting to note how, in the 'Systema Naturæ,' the natural character is constantly used in the artificial zoological system, and how really natural much of the primary part of the classification is. Dividing the Animalia into six classes, Linnæus characterizes each one by the positive characters of its organs of assimilation and respiration. He considered also the masticatory and digestive apparatus, the locomotive and generative powers, and the nature of the outward covering. He gives the natural characters of the orders, but arranges them for classificatory purposes by the distinction of the three kinds of teeth. That idea was not Cuvier's, as is believed and constantly taught. Moreover, Linnæus did not forget to consider the extremities as possible classificatory elements. He was the first who, after establishing the order Primates, placed Man amongst the animals. This was naturally resented; and it led in after years to a bitter criticism on the part of M. Lamettrie, who complained to Voltaire that Linnæus had associated man with the pig and horse. Indignant, he shouted "He is a horse himself;" and he got the reply, "Vous conviendrez que, si M. Linnæus est un cheval, c'est le premier de tous les chevaux."

The classification of the Insecta alone would have carried down the name of Linnæus to posterity.. It was the result of his usual careful study of very many species, and of a critical analysis of their most important external organs.

The class was in dire confusion before Linnæus studied it, and he founded those seven orders which have lasted, with some trifling alterations, to the present day. Each order was founded mainly on the nature, texture, and number or absence of the wings; and the generic characters relied upon were the differences of the antennæ, the elytra, the head, rostrum or mouth, in the case of the Coleoptera. In the Hemiptera the rostrum was of primary classificatory importance; in the Lepidoptera the antennæ and wings; and in the Neuroptera the mouth, wings, and tail. In the Diptera the mouth or proboscis was considered; and in the Hymenoptera the mouth, wings, and sting.

The Aptera contained many forms which are now placed beyond the Insecta; and the eyes, tail, and number of feet were made of primary classificatory importance.

Possibly Linnæus knew some of the other classes as well as he did the Insecta; but the impression left on most naturalists will be that this one was his special study.

He clearly recognized the relation of plant and insect; and, indeed, one of his pupils, Forskål, wrote a work on the Insecta, classifying them by their being found upon, or being destructive to, certain special plants.

The excellent terminology and the method of using it by

In his 'Conspectus Materiæ Medicæ' Linnæus gives the usual proofs of exceeding care, and of the accuracy and similarity of method, which are found in all his works. The amount of painstaking observation, deep research, and compilation is indeed great in this book. Nothing is out of place; every thing relating to the subject is recorded; and the few omissions are rectified in the copy belonging to this Society, and appear as marginal notes; so that the students of that age had before them all the weapons of the healing art readily distinguishable, and with their uses and operations tabulated. Much of the first part of this 'Conspectus' is more of antiquarian interest than directly useful. Nevertheless many a household word of physic is found, if not for the first time, in the 'Conspectus' very carefully explained; and, in parts, the work may be called a book on therapeutics.

The sufferings of humanity have been great at the hands of physic and physicians; and it was hard on the human race that whilst it was struggling in the rise of rationalism, it should have had such horribly unpalatable remedies for nature's ills. But whether the *materiæ* were nice or nasty, useful or innocuous, Linnæus classified them tersely, yet positively, enough. He treated the drug-yielding plant or animal or mineral as a something to be brought within a higher therapeutical group, and this into one of a series of grand divisions which related to the manner in which the drug acted. Old names are found in these divisions which were used in physic half a century ago, but which have been eliminated since, such as Borborygmia, Sternatutoria, Sophisticantia; and one can believe that Linnæus enjoyed recording these loud-sounding terms for matters which are less elegantly expressed in the vulgar tongue. He conscientiously states how each drug tastes, smells, and looks.

As a curiosity one may take a Rodent, or rather one of the Glires, as a remedy given:—

"*Lepus timidus.* Cauda abbreviata, auriculis apice nigris.
" *Locus.* Europa.
" *Pharm. prep.* Leporis Tali.
" *Comp.* Pulv. pleuriticus.
" *Qual.* Os primum metatarsi in suffragine posteriori.
" *Vis.* Absorbens.
" *Usus.* Colica, Pleuritis, Epilepsia, &c."

Amongst the Animalia which contributed to the Materia Medica of the age of Linnæus was, according to him, *Homo sapiens*, placed at the head of the Primates:—" *Locus.* Per totum terrarum orbem, at Mumia in Ægypto.

" *Pharm.* Hominis. 1. Cranium: raspatum, præparatum.
" 2. Ossa.
" 3. Axungia, Sal Sanguinis, Urinæ.
" *Comp.* Pulv. de Guttata, Arthetic. Specific. cephal.; Mumia.
" *Qual.* 1, 2 insipida, inodora, terreo-gelatinosa. 3 pinguis.
" *Vis.* 1, 2 absorbens. 3 emolliens.
" *Usus.* 1 Epilepsia."

It will interest some ornithologists now present to know that even *Corvus* contributed to the Materia Medica:—

"*Corvus pica.* Albo nigroque varius. Cauda cuneiformi."

Patients in those days drank "Aqua Picarum composita."

The Amphibia were considerable contributors, and were recorded after the invariable practice seen throughout the book. First came the name and specific diagnosis; then the habitat; then the Pharmacopœial preparation; then the quality, taste, smell, &c.; then the action; and finally the uses.

It is of course the botanical part of this Conspectus which is the most valuable; and it is a conscientious record and abstract of the qualities, uses, and medicinal preparations of every known plant which had, up to the time of the writer, been used in the healing art. The classification is his own, and the terse generic and specific diagnoses are eminently Linnean.

How well Linnæus was read in the lore of therapeutics can be appreciated after looking through a few pages of this book; and it is evident, from the notes to many of the species, that he was eminently qualified to judge about the medicinal actions or inertness of many vegetable drugs. The most remarkable part of the book is the total absence of speculation; it is all record, on a uniform plan, whether the object be animal, vegetable, or mineralogical. The time which the compilation of this Conspectus must have consumed was great; and its extraordinary correctness is one of the many testimonies of the exactitude and painstaking of the great naturalist.

The necessity for writing this Materia Medica did not arise from a desire to publish works on every subject capable of classification, but from the possibility of giving a practical bearing to a course of lectures on the Diagnosis morborum. This was a course which formed a part of Linnæus's duties as a Professor at Upsala; and it was not likely that he would deliver it in a perfunctory manner. He classified the whole of the known maladies of his day, 535 in number, as if they had been objects of natural history. Linnæus's work arranged diseases in eleven classes and each one of these into orders and genera.

There is no doubt that his correspondence with Sauvages of Montpellier was mutually beneficial; and Linnæus was lecturing on the subject when the work 'Les Nouvelles Classes des Maladies' appeared. In this work Sauvages endeavoured to define and classify diseases from their constant and evident symptoms only. His friend found this classification congenial, and indeed the Art of Medicine admitted of no other scheme at that time, for the causes of disease were very little understood. There who care more about the natural-history studies of Linnæus than the doubtful medical lore of his day. He classified fevers under two classes—the Exanthematici, subdivided into Contagiori and Sporadici; and the Critici, including continued, intermittent, and remittent fevers. In a brief view on the Theory of Physic, Linnæus supposes the circulating fluids to be capable of being vitiated by principles which he considers as putrid ferments. The exanthematic class he considers to be excited by some external causes which are called contagiou, and which he hypothetically asserts to be Animalcula. At the present day we say Bacteria.

As might be expected, Linnæus had some original ideas about Geology. He writes:—"The globe which was covered with water has dried insensibly: the continents have appeared, and the seas have been restricted within their basins. The traces of a slow and successive retreat of the ocean are seen everywhere: the traces of the universal deluge are not apparent anywhere. Water, the earth, and its salts are the only 'principles' which have contributed to the formation of animals and vegetables. These, after a more or less short life, are reduced into an earthy substance proper for the formation of new organisms, which perish in their turn." He notices the layers of different kinds of rock, the presence of fossils and petrifactions, and considers that water alone acted, and not fire.

Lamarck, the founder of Philosophical Zoology, came before the scientific world, in the first instance, as a botanist. Like many naturalists of his century, he studied nature in preference to disease after having passed the portals of the medical profession. His love of anatomy, however, never ceased, and bore great fruit in subsequent years; but in the first instance he studied plants, and became practically acquainted with those of large districts in France. He passed some ten years working patiently at his 'Flore Française,' and gradually elaborated a classification which was the result of much consideration.

Many years had elapsed since the artificial method of Linnæus had been founded, and in the meanwhile the natural system of the Jussieus had been used and appreciated. Lamarck very properly considered the first method of great use in finding out the name of a plant, and gave the last its true value as a scientific classification, which alone could serve as a fixed base for any anatomical and physiological investigations. He considered that the natural method placed a plant or animal in the *midst of those with which it had the greatest number of important structural resemblances*, and that the artificial system isolated and distinguished a form from all others. He saw clearly that the natural method must be true, and that it must be founded upon the nature and structure of the most important organs without considering whether they were to be readily observed and recognized.

Giving both methods their due, he utilized them. In the

'Flore Française' the classification was a combination of the systems of Linnæus and Jussieu, and was analytical. The student was led to the required result by choosing between two contradictory characters taken from the most apparent and most readily seen structures. This analytic or dichotomous method was enlarged upon by De Candolle; and it has even been used in other branches of natural history. For instance, M. de Fromentel employed it in his work on the Fossil Corals. There is no doubt that the plan has not the simplicity of the Linnean system; and it may be said that it is more easily used by the advanced botanist than by the student. When the 'Flore Française' appeared, France, thanks to Rousseau, was botanically inclined, and the work, a very admirable one, at once placed its author high up in scientific estimation. He was a Member of the Académie des Sciences, and subsequently was associated with Daubenton, who had charge of the Herbaria of the Cabinet du Jardin du Roi.

Years rolled on, and the future zoologist reached the age of fifty, when, *nolens volens*, he was made a Professor in the Museum of Natural History and had the Vermes, of which he knew nothing, given to him as his special objects of study and charge. Lamarck, however, entered his new studies admirably trained, and very shortly afterwards he began to classify and teach. As years rolled on, he wrote his great work 'Les Animaux sans Vertèbres,' having evolved the great idea that the Animal Kingdom must be subdivided into the Vertebrate and Invertebrate divisions. Of the merits of that work, every student of the lower animals who cares to seek the origin of what is now common knowledge must entertain the highest opinion. It is not a *Systema* like that of Linnæus, but, in addition to being a careful classification on the natural system, it comprehends some remarkable chapters on philosophical natural history, which are also elaborated in the 'Philosophie Zoologique.'

The 'Philosophie Zoologique' is a work rarely read; but it was far in advance of its day, and it dealt with those great questions which were subsequently so thoroughly thought out and published by Charles Darwin. The book contains:—

1. The general principles relating to the study of the Animal Kingdom.

2. The observed and essential facts which are necessarily considered in the study.

3. The considerations which relate to the non-arbitrary distribution of animals and to the best methods of classification.

4. Inductions and deductions founded on received facts, and which are the foundations of a true philosophy in science.

In the first part Lamarck treats of Art in Natural Science, such species, but only individuals which succeed each other, and resemble those which produced them. But these individuals belong to infinitely diversified races which present shades of distinction in all their forms and in all their degrees of organization, and each one of which maintains its character without mutation *so long as no cause of change acts upon it.*"

He wrote:—"There is an order in Nature, and it can be recognized by the structural affinities of living bodies. It is the least recognizable when forms are at the extremities of a scale, and when their organization presents the greatest possible differences. This order, recognized by relations of structures, should replace all artificial systematic classifications."

Lamarck proceeds to define the primary classificatory terms, and recognizes the beauty and value of the orders of Linnæus.

In considering the structural relationships of animals, Lamarck places the organs in the following order in reference to their importance—those of locomotion, respiration, circulation. With regard to the Vegetable Kingdom, he considered the order to be—the embryo and its accessories, the sexual parts of the flower, the floral envelopes, the envelopes of the seed, and the reproductive bodies, "qui n'ont point exigé de fécondation." It was after studying their structural relations that Lamarck stated he recognized that the Infusoria could not be associated with the Polypes in the same class, and that the Radiata could not be confounded with these last—that the Vermes were an isolated section, that the Arachnida could not be classified with the Insecta. He was able to point out, on this plan, that the break was vast between the highest Invertebrate, which he considered might be one of the Heteropoda, and the possessor of the simplest osseous or cartilaginous spinal column.

Lamarck then considers the genus; but time will only permit me to select passages from his works relating to species. He suggests that the endeavour to define what is called a species and the attempt to discover whether species are absolutely constant and as ancient as Nature herself—having lasted on, as they now are—are not necessarily futile undertakings. On the other hand, he says it is worthy of consideration whether species have or have not been subjected to changes of circumstances which have been relational to them, although acting with exceeding slowness, and whether specific forms have or have not changed in character and shape during lapse of time.

He states that the elucidation of this question of modification is not only of interest to our zoological and botanical knowledge, but is necessary for our comprehension of the history of the earth.

Then comes the celebrated definition of species:—"A collection of similar individuals which were produced by other and similar individuals." Lamarck proceeds: "This definition is exact; for every living creature *nearly* resembles those which produce it." "That the species," he writes, "is constant is not true; it is not distinguishable by invariable characters; and the old idea of the duration of species from the beginning is readily disproved by the naturalists who study the treasures of the museum."

"Everybody," he says, "knows how difficult it is to recognize or to determine species, on account of the existence of races and varieties which merge, shade by shade, into neighbouring species."

"Species only have a constancy relational to the duration of the circumstances under which the individuals have lived. Many genera of plants and animals are of such magnitude, on account of the number of species, that the study and distinction of the species are almost impracticable. The species of these large genera arranged in series and allied by their structures show such slight differences with those which could be placed next to them, that they merge and shade into each other; and thus the species become, as it were, more confounded. The isolated species only exist because the gaps between them are not yet filled up." "I do not," Lamarck continues, "assert that animals form a simple series, everywhere equally intershading; but I would say that the series is a branching one, gradating irregularly, and which has no discontinuity in its parts, or which, at least, has not always been discontinuous; for there are lost species to account for."

"A mass of facts," he says, "teach us that when individuals of a species change their localities, climate, and habit of living, they are influenced thereby, and change little by little in the consistence and proportion of their parts, shape, and organization, so that every part participates, in time, in the mutation. Simple variation of individuals is produced, at first, under varying conditions under the same climate; but in long periods these constant vicissitudes operate upon succeeding generations, and lead to structural and necessary distinctions. After many generations, the individuals which were once in one species would find themselves transformed into another and distinct one." Lamarck wrote that he perceived the importance of a method in Nature which consists in preserving in newly reproduced individuals *all that the results of life and its conditions have produced in the organization of the ancestral forms.*

The influence of hybridity and the ability of hybridization to perpetuate species is denied. He disposes of the argument against variability used by certain naturalists in consequence of M. Geoffroy's Egyptian collection showing no specific changes. He states that the conditions have not altered, and therefore the forms have remained as they were. He adds:—"But we may rest assured that this appearance of stability of things in Nature will always be taken 'par le vulgaire des hommes' as a reality, because in general they only judge from personal experience."

Lamarck did not recognize life to be any thing else than a natural process. He speculated on the probability of spontaneous generation in the most simple forms of life only. He says it is not proved not to be the case.

A most extraordinary passage deals with the kind of matter which should most readily receive the first traces of organization. It should be of gelatinous or muco-gelatinous consistence, coherent, but verging on fluidity. Here is Lamarck's physical basis of life.

There is a short paper in the 'Philosophie Zoologique,' "Des Espèces dites perdus." He notices that very few fossils are exactly like existing species, that it is not safe to argue that the floor of the sea and the remote parts of the earth may not yield species hitherto considered to be extinct. He states that when any fossils belong to recent species, they are found in the newest strata; and he asks, May not extinct species be really existing in the form of recent ones into which they have passed by modification during long periods of time?

Then he takes up the argument that altered conditions, climate, and the necessary wandering over the earth necessitate *changes in the besoins* (*wants and habits*) *of animals*. That if organs are not used as much as formerly they degenerate, and, on the contrary, they increase and alter with extraordinary use. So that in long periods the *besoin* leads to specific modifications.

It is perfectly evident to every student of Lamarck who reads for information and not to jest, that the *besoin* (*want*, *requirement*) is not a *positive active wish* on the part of the animal.

With regard to the Vegetable Kingdom, Lamarck accounts for variation by alterations in the nutritive and circulatory processes. He stated that the Animal Kingdom arose with the lowest forms, and that the wonderful complexity of the highest is due to progressive modifications due to changes in external conditions during long periods. The earth itself has been subject to a law of general progress; and it is not necessary to suppose universal catastrophes.

As if to complete the argument, Lamarck treats of the influence of cultivation on plants, and writes, as regards animals:—"How many very different races amongst our pigeons and fowls are produced by raising them under different conditions in different countries. We may look for them in vain in Nature."

Lamarck divided the Animal Kingdom into animals which are apathetic—those which move in consequence of the excitement of structural irritability. Others have sensations added. Others have irritability, sensation, consciousness, and the faculty of evolving certain ideas, and of using a will subject, however, to propensities definite in their object. Others form correct ideas, think, and have a free will and no overruling propensities. He distinctly relates these faculties to organs which have become evolved during ages with the other modifications of specific forms. Sensation, will, proclivity, capacity for evolving ideas and utilizing them are successive steps accompanying progressive complexity of organization.

Finally, it may be added that Lamarck notices that man, of all animals, is the only one who *foresees and fears death.* He asserts that this terrible faculty stimulates in definite directions. *Le bien-être* is good for man. Had man's heart only nerves from the spinal cord and not also from the eighth cerebral pair, it would not have been subject to the empire of the passions. Nature never acting otherwise than gradually, and not being able to produce animals otherwise than successively, has evidently proceeded in this production from the most simple to the most complicated.

These thoughts were the favourite themes of Lamarck in the beginning of this century.

What a difference there was between these two students of Nature! Linnæus essentially observant and loving positive knowledge—industrious, light-hearted, increasing year by year in wealth after a time of great poverty, dying regretted and honoured by his country. Lamarck observant, infinitely reflective, and dealing with the subjective wherever he had the opportunity, painstaking, ever labouring, ever rising in the estimation of his fellow labourers, yet sinking into abject poverty and neglect. Yet in his days of misery Lamarck never was otherwise than resigned; and the sentences in the 'Philosophie Zoologique' which relate to the moral conduct of Man are more noble than those of Socrates.

## OBITUARIES.

**JOHN HUTTON BALFOUR** was born in Edinburgh on September 15th, 1808, and died on 11th February, 1884, at Inverleith House in the same city. Passing his early years of education at the famous High School, he studied in the Universities of St. Andrews and Edinburgh, graduating at the latter in Arts and Medicine. He decided on a medical profession, after some time spent in Continental Schools, although his first bent was towards the Church. During his early years of medical practice, his inclinations induced him to pursue the study of plants beyond the needed limits of the curriculum, no doubt stimulated thereto by the influence and example of Prof. Robert Graham, who then occupied the Chair of Botany at Edinburgh. With some like-minded friends, Dr. Greville, Prof. Graham, the Macnabs, and H. C. Watson, the Botanical Society of Edinburgh was founded in 1836; it has flourished since that time, and showed its sense of the loss sustained by the death of its founder, by adjourning the first meeting fixed after the arrival of the news. In 1840 Balfour began lecturing in Edinburgh, and his lectures were so well received that his classes became thronged; two years later, when Sir William Hooker left Glasgow for Kew, the vacant chair was filled by Balfour; until in 1846, the death of his old teacher, Graham, made an opening at Edinburgh, which Balfour filled, henceforward abandoning the practice of medicine.

For thirty-three years he lectured on Botany at Edinburgh, to the largest classes probably ever brought together; about eight thousand students, it is stated, passed under his tuition. His excursions were features of his system of teaching, and he was probably at his best when giving an extemporary lecture on some curious or rare plant in the field. His publications were chiefly introductory, his bulky class-book being the chief; he also contributed the article "Botany" to the 8th and 9th editions of the 'Encyclopædia Britannica.' With Mr. John Sadler he published a 'Flora of Edinburgh,' in 1863, which is little more than a skeleton list of plants, with localities, and falls far short of the just requirements of local floras. Much of his time was given to the duties of his position as Dean of the Medical Faculty, and Secretary to the Edinburgh Royal Society, besides minor offices. Failing health in 1879 compelled him to lay aside active work; the relief seemed to give him a renewed lease of life, so that his death came at last rather as a surprise.

He was elected a Fellow of the Linnean Society June 18th, 1844.

His son, Prof. Isaac Bayley Balfour, was appointed Professor of Botany at Oxford at the time of his father's death.

**Walter Francis Montague Douglas Scott**, Fifth **Duke of Buccleuch**, was born 25th November, 1806; and died at Bowhill, Selkirkshire, on 16th April, 1884. He was elected Fellow of this Society December 17th, 1833; was President of the Royal Horticultural Society from 1862 to 1883, when he resigned; and in 1867 he was elected President of the British Association, since which time the Presidents have been chosen exclusively from men of scientific eminence rather than from social position.

The Duke had some connexion with horticulture, not only as the owner of two of the finest garden-establishments in the country, Dalkeith Palace and Drumlanrig Castle, as well as half-a-dozen or more smaller ones, but in virtue of his association with the Royal Horticultural Society, the Royal Caledonian Horticultural Society, and the Gardeners' Royal Benevolent Institution. His connexion with the Royal Horticultural Society commenced early in 1862, shortly after the death of the Prince Consort, when, the Queen's wishes being consulted as to the choice of a new President, Her Majesty signified the Duke as the person she would like to hold that position. This office he held until April 1883, when, with other Members of the Council, he resigned, his successor in the office of President being Lord Bury. On the death of the late Duke of Devonshire, the Duke of Buccleuch was elected President of the Gardeners' Royal Benevolent Institution, and by his death the Institution has lost a munificent supporter.

**Thomas Hughes Corry** was born in Ireland in the year 1862, and was accidentally drowned, on August 4th, 1883, by the upsetting of a boat on Lough Gill, which he and a friend, Mr. C. Dickson, were using for the botanical exploration of the islands in that piece of water. At the time of his death he was Lecturer in Botany in the Cambridge University Medical and Science Schools and at Girton College, and Assistant Curator of the Herbarium under the care of Prof. Babington. He was elected F.L.S. December 7th, 1882; and read an elaborate memoir on the Development of the Pollinium and Fertilization of *Asclepias Cornuti*. Part has already been published in our Transactions, and a concluding part is on the point of being issued. In the illustration of this he was assisted by his wife. A most promising career was unhappily cut short by accident.

Dr. George Engelmann, who for many years had resided at St. Louis, Missouri, taking a leading part in all matters relating to his profession, to science generally, and botany in particular, was born at Frankfort-on-the-Maine February 2nd, 1809, graduated in that city, but soon took up his residence in the United States. It thus happened that he was of necessity almost as well known to British botanists as his associates and fellow labourers, Torrey and Gray, and those of a younger generation. Engelmann, indeed, has helped forward in many ways the botany of his adopted land. On the Conifers, the Oaks, the Agaves, the Cactuses, the Vines, the Cuscutas, and sundry other groups he had come to be looked up to as the leading authority. He was a hard worker; and his time and knowledge were always at the service of his friends and colleagues, a referee in whose authority on certain subjects might be placed implicit confidence—the more so as he was entirely free from dogmatism, and ready at once to admit an error or oversight.

His reputation, of course, extended beyond the English-speaking countries; for he had become the leading authority on Conifers and other subjects. So completely had he identified himself with systematic botany, that his earlier morphological work has been forgotten by most people. Nevertheless it was in his academic essay on plant monstrosities, 'De Antholysi Prodromus,' in 1832, that the indications of the "calmness and clearness of perception and judgment," which Goethe remarked of him, that characterized him were first made evident. The work in question preceded by a dozen years or more that of Moquin-Tandon, and, though written in rugged Latin, which contrasts unfavourably with the elegant French of Moquin, is remarkable for its clearness of statement and simplicity of method. At that time the theory of the metamorphosis of plants enunciated by Goethe, which, from a purely morphological point of view, is unaffected by the more modern conceptions of evoluwhich has been cited above. At this period Engelmann was the friend and fellow student of Alexander Braun and Schimper, the leaders of morphological botany in Germany. Later on, as we have seen, Engelmann made his morphological knowledge subservient to his work as a descriptive botanist and systematist; but though subservient, there are frequently traces of it to be met with, which, with the fuller indications given in his private letters, show that to the last he not only retained his interest in morphology, but kept himself informed as to the latest stages of its development.

Engelmann's communications published in this country related principally to Conifers and Agaves; the enthusiastic botanist, at a time of life when most people would have preferred to remain at home amongst the comforts of town-life, accompanied Professor Sargent, Dr. Parry, and Mr. Skinner on a visit to those forests whence fifty years previously Douglas had sent so many fine Conifers and other plants. Much remained to be cleared up about these plants; their nomenclature and synonymy was a matter of constant discussion, and with constantly varying results. On this expedition Engelmann was enabled to gather many of the plants in the very localities indicated by Douglas; and moreover, he was enabled to study their distribution and their modifications as they diverged in one direction or another, or occupied different stations from the coast to the slopes of the mountains. The whole account of this journey is eminently worth reading by persons interested in the trees and shrubs of California and Oregon; and of special interest was the discovery that *Cupressus Lawsoniana* was the source of a large proportion of the timber used in Oregon under the name of the Port-Orford Cedar. Lawson's Cyprus (150 feet high), Douglas's Fir, *Abies amabilis*, *A. grandis*, *A. nobilis*, *Tsuga Pattoniana*, *Chamæcyparis nutkaensis*, *Thuja gigantea*, and other interesting trees were met with, and their peculiarities noted on the spot. A brief narrative of this memorable expedition, from the pen of one who took part in it, and portraits of three of its members, including Engelmann, was given in the 'Gardeners' Chronicle' for July 2, 1881.

Dr. Engelmann occasionally visited this country, when his aid was eagerly sought in settling questions of nomenclature—as may be seen from the numerous notes and memoranda with which he has enriched the Kew Herbarium. Last summer another visit was expected from him; but while in Germany, at Kreuznach, he became so feeble and ill, that it was feared that he would not live to return to America. On improving somewhat, he gave up the intention of visiting this country, and persuaded to keep his room; and on the 4th Feb. 1884, he succumbed to the effect of cold on the lungs. Thus closed the career of an able physician, an acute botanist, an indefatigable labourer in the field of science, and a simple-minded, warm-hearted, sympathetic friend.

He was elected a Foreign Member of the Linnean Society May 2nd, 1878.

Dr. Oswald Heer was born at Glarus on August 31st, 1809. He studied theology at first; but afterwards abandoned it for medicine, his father's profession; and devoted himself to entomology and botany. In 1832 he was living at Zurich, where he remained during life. In 1837 he was Professor at the University or Polytechnic School, and Director of the Botanic Garden. In 1848 he began to collect materials for a fossil flora of Switzerland and the adjoining countries; in which he was helped by the rich collections of the Zurich Museum, of Alexander Braun of Berlin, and especially by the resources of a rich lady, Madame von Bumine, who opened upon her property near Lausanne, quarries and tunnels for the discovery of fossil plants, which materials were sent to Heer at Zurich by the ton, many of the specimens figured in the 'Flora Tertia Helvetica' being from that source, and suitably acknowledged in vol. iii. of that work. A fourth volume, 'Flora fossilis Helvetica,' was published in 1876, with illustrations of plants from the Carboniferous, Trias, Jurassic, Cretaceous, and Eocene of Switzerland, its publication advancing its author to the leading rank of phytopaleontologists.

An earlier work of his, 'Die Urwelt der Schweiz,' was published in 1865; although restricted in its area, it has been translated into six languages, and has run through several editions.

He examined and named many collections of fossil plants, amongst which may be specified the Flora of the Clays of Bovey Tracy (1861), Baltic Miocene Flora (1863), the Eocene Flora of Bornstaedt (1869), the Chalk Flora of Moletin and of Quedlinberg (1871). During this time he was steadily at work upon his 'Flora fossilis Arctica,' which, begun in 1862, was finished by the issue of vol. vii. only a few months before his death; herein he brought to light the remains of a subtropical vegetation for Greenland and Spitzbergen, a climate during the Tertiary period resembling that of Florida and the Gulf of Mexico at the present day.

His character is described as simple and modest in the highest degree. His lectures at the University were largely attended, even when his weak health, against which his life was a constant struggle, compelled him to lecture from his bed. He was once elected Councillor of State; but finding that his new duties took

JOHN ELIOT HOWARD, the scientific chemist and quinine manufacturer, probably inherited his love of scientific research from his father, Mr. Luke Howard, F.R.S., a well-known meteorologist in his day, and a correspondent of Goethe, who admired his works sufficiently to write a poem on their author. He was the great-grandson of an officer who lost his fortune and estate in the cause of James II.; and his wife was descended from the Westons, Earls of Portland. Their son was born on December 11th, 1807, and passed a long life of active usefulness. His diligent researches connected with the history of febrifuge alkaloids led, in 1858, to his purchase at Madrid of a manuscript by Pavon, and of a large collection of specimens of Peruvian bark collected by that botanist in Peru. He also employed the botanical artist, Mr. W. H. Fitch, to proceed to Madrid and execute careful drawings from Pavon's specimens. The result was the publication, in 1862, of Mr. Howard's magnificent illustrated work, 'Illustrations of the 'Nueva Quinologia' of Pavon, and Observations on the Barks described.' When Mr. Clements Markham introduced the cultivation of Cinchona plants yielding the febrifuge alkaloids, from South America into India, he found in Mr. Howard a most valuable adviser, ever ready to take any trouble, and to help by all means in his power in furthering an undertaking which he believed to be of great public utility. Mr. Howard rendered his assistance in the most public-spirited way, and without a thought of recompense or remuneration. He undertook the laborious analysis of barks grown on the plantations in India, and furnished a series of Reports which have been invaluable as guides to the cultivators. In 1869 he embodied the results of his investigations in another costly work, entitled 'Quinology of the East-India Plantations,' which has also been of essential use to all who are engaged in Cinchona-cultivation. Mr. Howard's aid has thus been of great value and importance from the first in securing the success of this great undertaking. His disinterested services were highly appreciated by the Government; and on October 17th, 1873, the Duke of Argyll, then Secretary of State for India, caused a letter to be addressed to Mr. Howard conveying the thanks of Her Majesty's Government to him for his valuable assistance in connexion with Cinchona-cultivation. Mr. Howard was the author of numerous pamphlets and papers in pharmaceutical journals; but his literary work was by no means confined to the subject of quinology. He took a deep interest in the general progress of science; he thought much on the questions which are occupying the minds of learned men; and on several occasions he gave the results of his meditations to the world. The high position he had gained as a man of science was recognized by his election as a Fellow of the Royal Society; and he was also elected a Fellow of the Linnean Society 3rd February, 1857, Corresponding Member of the Société de Pharmacie de Paris, and of numerous other scientific Societies on the Continent. He died, almost suddenly, on November 22nd, 1883, aged 76.

Mr. Howard took great pride in his garden, where his rockery gave evidence of his love for plants, and a separate house was devoted to the culture of various Cinchonas, of which he had probably the largest collection anywhere in cultivation. His observations of the plants in growth, aided by his extensive dried collections, gave him a practical knowledge of these puzzling plants beyond that of any writer on the subject since his lamented friend Weddell. Latterly he took great interest in the question of hybridization, and specially as to the stability of hybrids—matters in which controversy has been going on for some time among cultivators of Cinchonas in India and elsewhere.

He was a man of strong religious convictions, and contributed a number of papers on Christian belief in relation to Science to the Victoria Institute, of which he was a Vice-President.

He married Maria, daughter of Isaac Brewster of Kendal, and leaves a large circle of children and grandchildren to lament his loss. He was buried in Tottenham Cemetery on Nov. 27th, 1883, in the presence of a very large gathering.

**Joseph Milligan** was born in 1807 in Dumfriesshire. He studied at Edinburgh, and became a Member of the College of Surgeons in 1829. In 1830 he was appointed Surgeon to the Van Diemen's Land Co.'s establishment in the Surry Hills of Tasmania. He remained in this employ as Surgeon, and afterwards as Surgeon-Superintendent, for ten or twelve years. During this time he became thoroughly acquainted with the botany and geology of the island. In 1843 he was appointed by his friend Sir John Franklin, then Governor of Tasmania, Superintendent of the Aborigines' Establishment at Flinder's Island. In 1848 the Aborigines were removed to Oyster Cove, where he continued in charge of them until 1855, when, their numbers having greatly decreased, it was found unnecessary to keep up the office of Superintendent. From 1847 to 1859, when he retired in order to visit England with his son, he was Secretary to the Royal Society of Tasmania, which he was instrumental in founding. He acted as Commissioner for Tasmania at the Exhibition of 1862. His writings are confined to numerous articles read before the Royal Society of Tasmania, and are published in its 'Transactions.' His long connexion with the aboriginal inhabitants of the Island of Tasmania gave him exceptional opportunities for observation of their character, language, &c.; and he has produced the largest and most complete vocabulary of their language, which is published in the 'Transactions' of that Society. Before the appointment of a Government Geologist, he made, at the instance of the Lieut.-Governor, numerous surveys of parts of the island, especially of the various coal-bearing districts. While making these surveys he frequently discovered gold and other minerals in the gulleys and creeks; and more than once predicted a grand future for Tasmania by the value of her minerals, which he had every reason to believe would be found in abundance when diligently searched for.

**Edward Milner** was born at Darley, in Derbyshire, of a good old family, his ancestors having owned land there since 1600. He was well educated at Bakewell Grammar School, and apprenticed to Sir Joseph Paxton, then Steward and Head Gardener to the Duke of Devonshire. After his apprenticeship he went to Paris to study for four years, chiefly at the Jardin des Plantes, under the Professors attached to that then flourishing institution. After travelling through Europe he returned to England, where he visited and reported on many of the principal gardens for Dr. Lindley, then Editor of the 'Gardeners' Chronicle.' In 1844 Sir Joseph Paxton entrusted to him the work of superintending the laying-out of the Prince's Park, Liverpool, the first park made with the view of increasing the selling-value of the surrounding land. This work was most successful, and was the beginning of Mr. Milner's professional work. When the Crystal Palace at Sydenham was decided on, Sir Joseph Paxton gave to Mr. Milner the carrying out of the extensive garden-works connected with it. Since then, Mr. Milner has most successfully practised for himself; his works, in the natural style, were not confined to this country, but are well known in France, Belgium, the Rhine Provinces, Denmark, and Sweden.

In 1881 the Crystal Palace Company organized a School of Gardening, of which Mr. Milner was asked to be the Principal. He undertook the work in connexion with his son, Mr. Henry Milner, who, having been his principal assistant for several years, was now taken into partnership. He died at Dulwich Wood, Norwood, on March 26th, 1884.

**John Jardine Murray**, F.R.C.S.E., of Brighton, was born at Edinburgh April 30th, 1834. He was the eldest son of George Murray, Esq., late of The Keir, Wimbledon Common, and formerly Principal of the Edinburgh Institution. At this well-known establishment Mr. Murray received his early education; and as a boy he became noted for his keen interest in all manly and intellectual pursuits. His grandfather, the Rev. John Jardine, Minister of the Secession Kirk, at Langholm, N.B., was a man of no mean acquirements; and it is not unlikely, therefore, that these parental antecedents had much to do with Mr. Murray's subsequent success in life. Had he devoted himself to pure science, his merits and work would have extended far and wide. His career affords an instance of a man who, with the strongest natural-history tastes combined with an eminently philosophical turn of mind, would not allow himself to be diverted from those professional pursuits which, as he conceived, duty had called upon him to pursue. At the same time, it must be allowed that the study of medicine and surgery had no inconsiderable attraction for him. He always acted on the "give-and-take" principle. As a student at Edinburgh, he rendered great assistance to those of his fellows who worked at scientific subjects. Many of the internal parasites described by one of our Fellows, and published in the Society's 'Transactions' for 1858, were obtained from water-birds shot by Mr. Murray in the Firth of Forth. A remarkable cestode (*Diphyllobothrium stemmacephalum*) and a species of fluke (*Distoma campula*), both new to science, were in like manner obtained from a Porpoise which Mr. Murray killed off the Island of May in April 1855. The birds and mammals that fell to his gun were forwarded to the Curator of the Edinburgh University Anatomical Museum; and there they were used for the purposes of dissection; whilst as possible "hosts" their examination also led to the discovery of several new helminths. Mr. Murray never allowed either trouble or expense to stand in the way of any cause he had at heart. At Brighton he promoted the formation and working of scientific Societies, apart from those of a professional kind; and he was especially helpful to young and rising artists. Of his medical writings we do not speak; but, as coming fairly within the borderland of anthropology, we may mention his interesting account of an hitherto undescribed malformation of the lower lip occurring in four members of one family. Others of the eight children of the same family exhibited different kinds of oral peculiarity or deterioration; and yet another child displayed webbed fingers on both hands. Mr. Murray had a particular liking for teratological investigation; and on one occasion he showed the writer of this notice a curious instance of double hand, in which case also redundancy of structure of the forearm appeared to be involved. The subject of this abnormality was a policeman's wife. Her left arm supported eight perfectly formed fingers, imparting to the hand an unusual stretch and equivalent power of grasp. The thumbs were altogether wanting. Photographs of this malformation have been privately distributed. Not unnaturally Mr. Murray's winning and sympathetic manners—coupled, as they were, with a masterful knowledge of his profession, with refined tastes and with a clear judgment—soon won for him the esteem of his fellow practitioners and the confidence of the public. In this way he was not long in acquiring something more than an ordinary competency, part of which was devoted to the purchase of choice works of art, and part to the formation of a valuable often attend the Society's Meetings, he could at least encourage others to lay a portion of their offerings on the altar of science. It was in this worthy and patriotic frame of mind that Mr. Murray joined our Society; and in less than three weeks after the customary welcome by the President he ceased to exist. Had he lived to observe more closely the work done by the rank and file of our body, there can be no doubt that every good scientific work or new movement sanctioned by the Society would have received substantial support at his hands. For the support of biological laboratories and such like indispensable aids to Zoology and fish-culture the actual worker in science cannot be expected to play the *rôle* of the patron.

Mr. Jardine Murray commenced practice in Brighton in 1859. Apparently in the enjoyment of health and vigour, he hoped to have been present at our Anniversary Meeting last year; but professional duties stood in the way. The very next day (May 25th) he caught cold when visiting a patient during a dense sea-fog; and the inflammation extending to the lungs, he expired on the 28th of the same month, his fatal illness thus lasting only three days. [T. S. C.]

**Prof. Hermann Schlegel** was born June 10th, 1804, and died on January 17th, 1884, at Leiden. One of his earliest works was his 'Essai sur la Physionomie des Serpens' in 1837, which has been styled the first really scientific book on serpents, and still remains a monument to the learning and ability of its author. In 1844 appeared a critical review of the Birds of Europe in French and German; and ten years later 'Vogels van Nederland,' of which a new edition appeared in 1878; and in 1857 his 'Handleiding der Dierkunde'; then his 'Die europäischen Tag-Raubvögel,' and his superb folio on Falconry, justly regarded as the finest work produced on that subject in modern times. He also brought out books on the fauna of Java and Madagascar, very many memoirs and papers in various languages in different publications, and his latest, 'Notes from the Leiden Museum,' in English.

By the aid of trained Dutch collectors in Japan, the Netherlands, Indies, and Malay archipelago, the Museum at Leiden under his charge accumulated a vast array of natural-history treasures. He died almost in harness, visiting to the last that Museum to which he was appointed in 1858 on the death of Temminck. He was twice married, and leaves a widow to mourn his loss, as well as the entire community of zoologists so distinguished an ornament of their science. His election as Foreign Member took place May 1st, 1862.

**Sir Arthur Scott**, Bart., was born 3rd September, 1860, and was the son of Sir F. E. Scott by Mildred Anne, eldest daughter of Sir William Hartopp, Bart. He died at Great Barr Hall, Staffordshire, on 18th March, 1884, of a relapse of peritonitis.

He was elected Fellow of this Society 3rd March, 1881.

**Edward Sheppard** was born in 1816, and died at Kensington after a short illness 8th September, 1883, two months after his retirement from the post of Collector of Customs for the Port of London. He had given for many years much attention to the Coleoptera, although latterly he had refrained from active pursuit of any branch of entomology. He was elected Fellow April 7th, 1859. He never married; but a large number of private friends regret the loss of his genial friendship.

**Peter Squire** was born at Stratton in Bedfordshire in 1798, and died on April 6th, 1884, at the age of 85. He was apprenticed, on leaving school at the age of 14, to a chemist and druggist at Peterborough, and then gave all his spare time to studying the folio edition of Sir John Hill's 'Herbal,' and the plants he could collect before business hours. He then came to London and filled several situations, and studied chemistry, attending the lectures which Brande and Faraday delivered to the Students of St. George's Hospital. After this he spent some time in Paris, acquiring an insight into French pharmacy.

In 1831, or thereabouts, Mr. Squire bought the business in Oxford Street with which he was associated for more than half a century. He turned his attention to improving medicinal extracts, and had to devote many hours after eleven at night to that inquiry. His successful researches brought him into note; and Sir James (then Dr.) Clark was instrumental in procuring his appointment as chemist to H.R.H. the Princess Victoria in the year before her accession, followed by the formal appointment on Her Majesty ascending the throne in 1837. This post he held during forty years.

He was twice President of the Pharmaceutical Society, and published many papers and books on matters connected with his calling. His latest scientific work seems to have been on a method of preserving the freshwater Medusa found in the Victoria tank at Regent's Park, which paper was read last July 9th before the Royal Microscopical Society.

He was elected F.L.S. February 4th, 1858; died of congestion of the lungs on the day stated above; and was buried at Kensal Green 12th April, 1884.

**Allen Thomson**, F.R.S., was the son of John Thomson, a year becoming a Fellow of the Royal College of Surgeons there. Soon after he became associated as Lecturer on Anatomy with a brilliant circle—Edward Forbes, John Goodsir, John Hughes Bennett, and others—of whom Dr. W. B. Carpenter still remains. Dr. Allen Thomson filled the Chair of Anatomy in Marischal College, Aberdeen, from 1839 to 1841, when he passed to occupy the Chair of Physiology in Edinburgh. Whilst occupying this Chair he wrote the first part of a little work entitled 'Outlines of Physiology.' This manual, had he completed it, would doubtless have become extremely popular; as far as it went (pp. 308), it was considered by competent judges to be a perfect model of its kind. At this time also, during Professor Goodsir's temporary absence from ill-health, Thomson undertook the duties of the Anatomy Chair, which he filled with the utmost satisfaction to the students of the University. Six years after he became Professor of Anatomy at Glasgow; and whilst engaged in the arduous duties of that post he found time to write the well-known and highly scholarly article entitled "Ovum" for Dr. Todd's 'Cyclopædia of Anatomy and Physiology.' So conscientious was Thomson, that he sought to verify facts relating to many obscure and disputed points of animal embryology whilst he was thus engaged. It thus happened that he spent less than eight years over the production of that essay. Perhaps the most valuable part of his contribution related to the question of the mode of impregnation in Nematoid Parasites. He supported generally the view of his distinguished pupil, Henry Nelson, whose prize thesis at Edinburgh (afterwards published in the 'Philosophical Transactions') excited much controversy abroad. In particular the views of Nelson were assailed by Professor Bischoff, who declared that Nelson had mistaken epithelial scales for spermatozoa; but Thomson came to the rescue, and showed that both himself and Meissner had confirmed the truth of Nelson's statements in regard to the passage of spermatozoa into the ovarian tube of *Ascaris mystax*. Professor Thomson was an accomplished linguist, and consequently he was able to reply to his opponents effectively in the pages of Siebold and Kölliker's 'Zeitschrift,' as well as in the article above quoted and elsewhere. He took exception to the view of Meissner, who believed in the existence of a micropyle in the unimpregnated ovum of *Ascaris mystax*; Thomson holding, with Nelson, that there was no true vitelline membrane, and consequently no micropyle, in the ovum of *Ascaris* at the time when the spermatic corpuscles first arrived at the germs in order to penetrate them. The controversy thus excited went on for many years; and some of the subsidiary questions then raised can hardly be said to be solved at the present time. More of this controversy would have been heard had not Henry Nelson taken his departure for Dunedin, New Zealand, where he died long before his eminent friend and teacher left the Northern University.

Professor Thomson remained at Glasgow till 1877, in which year he became President of the British Association at Plymouth, taking as the subject of his Address the "Development of the Forms of Animal Life." Since then he resided in London until his death on March 21st, 1884, having been elected Fellow of the Linnean Society on January 15th, 1880, and F.R.S. in 1877. Professor Thomson was a most amiable and courteous gentleman, beloved alike by colleagues, students, and, one may probably say without exaggeration, by all who had the pleasure of knowing him personally. On the occasion of the transmission of his remains to Scotland the President and Office-bearers of the Royal Society assembled at the Euston Station to pay their last tribute of respect; a large number of Fellows of that Society and several of the Linnean Society were also present.

**Joseph Wainwright** died of bronchitis on April 10th, 1884, at his house, Wakefield, aged 71. After leaving school he was articled to Mr. Picard, a Solicitor of Wakefield, who had a large practice in spite of being blind. He was admitted Solicitor in 1834 and married in the same year; but his wife died in 1874, leaving no issue. For many years he was a prominent Member of the Yorkshire Naturalists' Union, and for some years its President. The Wakefield Naturalists' Society was formed at his instigation in 1871; he was chosen first President, and continued such until his death. He greatly delighted in cultivating plants, and frequently threw open his richly stocked gardens and plant-houses to the public; he also officiated as judge at local flower-shows. He was elected Fellow of the Linnean Society June 17th, 1856.

## APPENDIX.

### Short Memoir of George Dionysius Ehret, F.R.S.

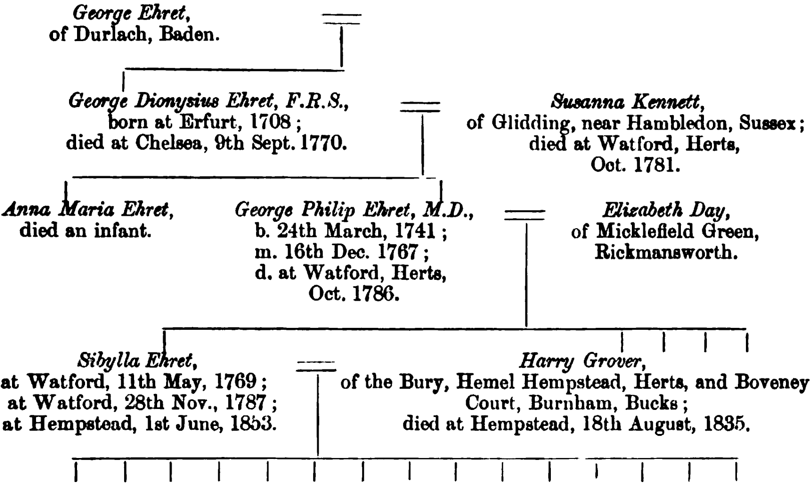
**George Dionysius Ehret**, son of George Ehret, Court Gardener at Durlach, Baden, was born at Erfurt in 1708, or, as is stated in Pilkington's 'Dictionary of Painters,' in 1710. Some account of his career is given in that work, and also in Dr. Pulteney's 'Historical and Biographical Sketches of the Progress of Botany in England' (1790). From these accounts it appears that after having been taken by the hand by Dr. Trew, of Nuremberg, for whom he subsequently executed the engravings in the 'Plantæ Selectæ,' he practised his art and continued his botanical studies at Basle, Montpellier, Lyons, Paris, and Haarlem. To this latter place he returned after a short sojourn in London, and it was

In 1740 he returned to England, residing principally at Chelsea. His skill in depicting botanical subjects brought him full occupation both as an artist and as a teacher, and his beautifully finished drawings commanded high prices. Among his published works the plates to Brown's 'History of Jamaica' and his own 'History and Analysis of the Parts of Jessamine which flowered in the curious Garden of R. Warner, at Woodford,' may be mentioned. In 1757 he was elected a Fellow of the Royal Society, to which he communicated several botanical papers that are printed in the Philosophical Transactions.

Among his pupils in London was the then Duchess of Portland, who made a large collection of his paintings at Bulstrode, which were sold for large sums at her death in 1786 *, when the Portland Museum was broken up.

G. D. Ehret married Susanna Kennett, of Glidding, near Hambledon, Sussex, and died at Chelsea on the 9th September, 1770, leaving one son, George Philip Ehret, M.D. His widow died at Watford, Herts, in October 1781†.

*Genealogy of the Grover and Ehret Families.*



*George Ehret*,
of Durlach, Baden.

*George Dionysius Ehret, F.R.S.*,
born at Erfurt, 1708;
died at Chelsea, 9th Sept. 1770.

*Susanna Kennett*,
of Glidding, near Hambledon, Sussex;
died at Watford, Herts,
Oct. 1781.

*Anna Maria Ehret*,
died an infant.

*George Philip Ehret, M.D.*,
b. 24th March, 1741;
m. 16th Dec. 1767;
d. at Watford, Herts,
Oct. 1786.

*Elizabeth Day*,
of Micklefield Green,
Rickmansworth.

*Sibylla Ehret*,
b. at Watford, 11th May, 1769;
m. at Watford, 28th Nov., 1787;
d. at Hempstead, 1st June, 1853.

*Harry Grover*,
of the Bury, Hemel Hempstead, Herts, and Boveney Court, Burnham, Bucks;
died at Hempstead, 18th August, 1835.

A family, including the donors of the letters of Linnæus, viz.:—

Miss Sophia Grover,
Miss Harriet Grover, } of Holywell Hill, St. Albans, Herts;
Miss Emily Grover,
and Charles Ehret Grover, Esq., of Hemel Hempstead, Herts.

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* See Gent. Mag. 1786, vol. lvi. pp. 527, 528.

† Mr. Carruthers states that in the Natural History Museum at South Kensington is an autograph autobiography of Ehret, as well as an independent biography of him by Trew. There are also some MSS. of Ehret in the same Museum.

## *List of Letters presented to the Linnean Society, October* 1883.

I. 29th Nov. 1736. LINNÆUS to GEORGE DIONYSIUS EHRET.

Holograph in Latin from Amsterdam on botanical subjects and acknowledging a letter from Ehret of Oct. 3rd.

II. 16th Jan. 1738. LINNÆUS to G. D. EHRET.

Holograph in Latin from Leyden acknowledging receipt of a picture, offering books, &c. Seal, a lily with the motto "CONSIDERATE LILIA."

III. 12th Aug. 1747. LINNÆUS to G. D. EHRET.

Holograph in Latin from Upsala expressing regret that Ehret cannot go to Upsala, asking for seeds from Chelsea Garden, &c. Seal, two serpents intertwined around a lily and holding in their mouths an open book, on one page of which the sun is represented as shining, on the other the inscription NVNQVAM OTIOSVS, around the seal DIOSCORIDES 2.

On the address are some directions in Swedish as to the letter being delivered into Ehret's own hands and not into those of Mr. Miller.

IV. 2nd Oct. 1747. LINNÆUS to G. D. EHRET.

Holograph in Latin from Upsala introducing Dr. Peter Kalm, who delivered it the 20th May, 1748.

V. 28th Sept. 1749. LINNÆUS to G. D. EHRET.

Holograph in Latin from Upsala acknowledging the receipt of some pictures and offering remarks on certain plants.

(Somewhat imperfect and damaged.)

VI. 12th April, 1759. LINNÆUS to G. D. EHRET.

Holograph from Upsala introducing Dr. Dan. Solander. Seal, a shield bearing a plant upon it, the cross of an order below; around, the motto FAMAM EXTOLLERE FACTIS.

VII. Undated, but probably March 1769. LINNÆUS to G. D. EHRET.

Holograph in Latin, received 3rd April, 1769, acknowledging letter of 18th February, and on botanical subjects.

The writer in this instance signs himself Car. Linné. Seal, a mantled coat of arms with a knight's helmet; crest, a flower; motto, FAMAM EXTOLLERE FACTIS.

VIII. 14th Feb. 1755. ANDREÆ to G. D. EHRET.

Holograph in German from Hanover subscribing for a copy of Brown's 'Natural History of Jamaica,' and describing the preparation of Agaric. Seal, a shield with St. Andrew on the cross.

IX. 19th Oct. 1756. LINNÆUS to Dr. [PATRICK] BROWN.

Translation of letter from Upsala praising the 'History of Jamaica' and commenting on some of the genera described.

X. 19th Oct. 1756. LINNÆUS to PETER COLLINSON.

Translation of letter from Upsala, giving account of what Solander, Kalm, Osbecke, Loefling, and Köhler are doing.

XI. 27th July, 1754. Mr. JOHN ELLIS to G. D. EHRET.

Introducing Mr. Oeder, sent over from Denmark with the view of laying out a botanic garden.

### LETTER I.

Viro Curiosissimo

Dno. Georgio Dionysio Ehretio.

Ichniographo summo S. pl. d. Carolus Linnæus Medic. Doctor et Soc. Nat. curiosor:

Literas tuas die 3 octobris Anni currentis dudum habui, ad quas mox respondissem, nisi tot incommoda mihi retardassent. Gratias quas possum summas habeo pro communicatis istis raris observationibus circa novi generis flores, quas manu tua incomparabili ad vivum usque delineatas misisti. Ad primam quod attinet, quam Tragiam aliam scandentem cum Sloane vocasti, est ista mea judice genuina Ricinoidis species, stamina licet quinque tantum pinxisti, tamen in descriptione decem agnovisti ut in Ricinoide communiter fit. Doleo quod non observasti flores fœmininos, quos vellem scire num egent in eadem planta, ut communiter, vel in distincto sexu ut in Ricinoidis ista specie quæ Houstonio Barnhardia dicta fuit. Nec dubito quin fructus sit tricoccos ut in congeneribus. Ad alteram quod spectet est ista mihi omnino ignota et absque omni hæsitatione novi generis ex embryone seu germine, quatuor licet exspectare semina nuda, adeoque ad Didynamiam Angiospermam omnino spectat, in tota tamen ista phalange in toto isto ordine nullum unquam vidi florem non bilabiatum; in hoc autem quantum ex figura concludere licuit florem irregularem, fructum autem ut in reliquis, stamina clara, stylus ordinarius, duo autem labia petali eruere satis difficile videtur. Utinam succederent vota, atque novum orbem adire tibi licitum foret, qui polles viribus corporis, sanitate optima, ingenio curioso et expedito, manu sine pari, sane non dubitarem quin publicum et totus orbis Botanicus per te longe plura proficeret, quam facile alio. Me apud Curiosissimum Doctissimumque D. Millerum cujus amicitiam præ reliquorum omnium magni facio, quod intime commendes est quod maxime peto, meque ad vota ejus omnia paratissimum promitto. Nuper vel ante mensem

cum dimidio a Societate Cæsarea L. C. Natur. Curiosorum literas habui, quodque electus eram ejusdem Societatis Membrum nomine Dioscoridis 2$^{di}$, ubi Præses in literis privatis scribit quod Doct. Widman Norinbergæ primus fuit qui me vocavit, quique tanti me fecerit &c. Tu qui novisti omnes Norinbergæ, ubi ego nullum umquam habui notum, quæso dicas mihi qualis iste D. Widman sit? Sassafras nobis periit, mox florebunt in hybernaculo Planta quædam nomine Ruellia ac Dno. Millero data, licet hæc non sit ulla ex Dilleniaris, Triumfeta, Coriotragomatodendros Plur? et duæ mihi omnino plane ignotæ arbusculæ africanæ. In horto Cliffortiano qui jam ad paginam 310 est absolutus videbis quo honore excipiam Dignissimum D. Millerum. Quam primum potero genera mea transmittam. Quæso inquiras per Dm. Millerum num D. Gronovius ad aliquem etiam mittat exemplaria Generum meorum et scias, si hoc fecerit, eum ista exemplaria methodo honesto viro indigno sibi comparasse. Rauvolfiam quam transmisisti erat egregia, ut et Dalea D$^{mi}$ Milleri in generibus meis. Quæso cum scribas ad Stenhufvud pete ab eo ut det D$^{no}$ Cliffortio Rationem tabularum quas depinxisti, nec pecunias habuisti, fuere enim Browallia, Rauwolfia et Dalea, et ego curabo ut pecunias mox habebit. Ante iter in Americam quæso ad me scribas.

Vale vir amicissime.

dabam Amstel. 29 Novemb. 1736.

[Addressed]
à Monsieur
Georgio Dionysi
Ehret
Chaelse.

## Letter II.

Articifici optimo

G. D. Ehret S. C. Linnæus.

Literæ tuæ una cum transmissa tabula, artis sanæ magisterium, ad me justo tempore accessere; reddo quas tibi potero grates pro dona, quodque me in tua benigna mente semper servas. Tabulam debui dare D. Cliffortio, qui summa admiratione plantam speciosam, inque hoc tuum magisterium rapiebatur.

Mea non modo genera, sed et reliqua opuscula lubens Tibi offero, quotquot potero omnia, modo curam gerere posses, ut aliquis ea a me exciperet, non enim dicere queo quam difficile mihi est hinc aliquid transmittere.

Dedi ante quadrantem anni D. Gronovio Corollarium meum &

mihi valde anceps periculum ei quid tradere ut transmittat, nec possum per alium.

Edo hic Artedi opera Ichthyologica, certe opera sine pari, quæ mortuo authore amico, in me suscepi.

Edo et hoc tempore methodos omnium Botanicorum ad unam relatas, quæ omnes absolutæ erint ad mensem Martii, quibus peractis ego abibo in Gallias, ut videam ibi Herbaria magnorum Botanicorum et dein redire in patriam; transmittam methodos per Gronovium ad D. Martynum, D. Millerum & te, si non accipiatis, ille, non ego, in culpa ero. Hortus Cliffortianus jam absolutus est ut modo aliquot tabulæ restent, in eo gratum animum reddidi Clariss. D. Millero ob tot communicatas novas & curiosas plantas: ipsi plurimam salutem impertias ab eo, qui Ejus vivit.

Devota mea officia Cl. Prof. Martyno dicere ne intermittas ter oro.

Hortulanus D. Cliffortii, Tuus amicus ut spero erit propediem Hortulanus in Horto medico Amstelædamensi, ubi qui antea fuit mortuus est.

Hortum Cliffortianum & Viridanium transmittat ipse D. Cliffortius.

Vale et me, quo soles animo, ama qui sum tuus . . . .

Lugd.-Bat. 1738.
Jan. 16.
C. Linnæus.

Rescribas, si placeat, ut habeam literas ante diem 8 Martii.

[Addressed]
To Mr. G. D. EHRET
at Mr. Philip Miller
in die Physitien garde
Londen &
Chelse.

## Letter III.

Amico antiquo
G. D. EHRET
S. pl. d.
Carol. Linnæus.

Multa tibi debeo, Amice colende, quod multoties pulcherrima tua dona ad me misisti; doleo et dolui semper quod numquam licuit mutuis officiis inservire, quum ego remotissimus habitem; omnes qui vident tuas picturas stupescunt. Est nobis Pictor Academiæ senex qui nec videt nec audit; omnes heic optant ejus fatum, ut te possent invitare, quamvis desperent obtinere, cum tui literas; quamvis ego nequeam mutuis inservire, tamen amico grato, licet absente, pius semper in te vivam. Te plurimum salutat Nietzel meus; ille optime valet, et habet propriam uxorem et filiolam propriam, et tranquille jam degit mecum in horto inter plantas non infrequentes.

Vale et mei memor vivas ut ego tui.

Dabam Upsaliæ, 1747 d. 12 Aug.

Mr. Noring at the Red Bull, Thames Street, just by the Still Yard

Empfangen, 17 Nov. 1747.

[Addressed]
Pictori Egregio
G. D. Ehret
Chelse.

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## LETTER IV.

Pictori Egregio
D^no G. D. Ehret,
Amico antiquo.

Ut tester quanti te tuamque amicitiam faciam has exaro literas. Tibi debeo multas et millenas gratias, qui constans permanseris amicus et quotannis mittis pulcherrimas picturas, nitidissima tua manu exaratas, quæ ornant et illustrant parietes musei mei et spectatores in tui admirationem rapiunt. Ego qui nil reddere queam, reddam gratum semper animum. Apud te commendatum habeo D. Kalmium nostratem, si ipsi dederis vel plantam siccam vel picturam, vel semen aliquod pro me, ille certo transmittet. Tibi facilis et quotidianus patet aditus ad Hortum Chelseianum, unde facile aliquot semina mittere poteris, quod velis nullus dubito. Ad hanc academiam nostram Upsaliensem comparavimus et instruximus observatorium Astronomicum, Hortum Botanicum, Theatrum Anatomicum, instrumenta physica et omnia quæ ad ornamentum scientiarum spectant; solus Pictor deficit; habemus senem pictorem, cujus fata exspectamus; tum nil magis in votis nobis esset, quam si te potuissemus nobis comparare; tum haberemus omnia. Ostendas quæso D. Kalmio nostro rariora Angliæ vestræ; ipsi quod feceris mihi facta reputabo.

Dabam Upsaliæ 1747. d. 2 Octobris.

CAROL. LINNÆUS.

Received ye 20 Maij, 1748,
from Dr. Peter Kalm.

[Addressed]
Pictori Egregio
D. D. G. Ehret
Londini.

## LETTER V.

Excellenti Pictori,
GEORGIO DIONYSIO EHRET,
Salutat
C. Linnæus.

Accepi a te missa semina, accepi tabulas tuas VIII., quibus præposita? . . . . . . orbis; pro omnibus grates tibi rependo maximas, easdem . . . . . . ubique.

Martynia tua $2^{da}$ est mea *Craniolaria*; si . . . . . . fructum . . . . . . quæso eundem delinees Martyniæ species enim esse nequit . . . . . . calyx, corolla, stamina.

Cereus tab. 2. f. 3 floruit et in horto nostro hoc anno; vere egreg . . . . . Oldenlandiam pulchre illustrasti tab. 2. fig. 1. Fac ut sciam numne ha . . . . . cibus saturate rubris et tinctoriis? Quod magnam meam a . . . . . plantæ.

Papajam egregie docuisti esse androgynam floribus masculis et feminis in eadem planta.

Anagallis tua tab. 3. fig. 2 est quantum ex figura conjecturare liceat.

Lysimachia calycibus corollam superantibus Roy. 416. Linum minimum stellatum C. B. 214.

Ketmia indica tab. 6. fig. 1 . . . . . tur varietas Hibisci foliis palmato-digitatis septem partitis Hort. Cliff. 350.

Alsine affinis tab. 6. fig. 3 novi generis esse plantam recte statuis; ego etiam hoc genus dudum condidi sub nomine *Molluginis* et dixi plantam Mollugo foliis sæpius septenis lanceolatis *Gron. Virg.* 14.

Abutilon tab. vii. f. 1 et tab. viii. novum se ipso genus est, quod D. Clayton Napæam dixit quod nomen retinui in Syst. Nat. edit. $6^{ta}$ et novum genus assumsi; floruit hæc planta tam mas quam femina in horto nostro, seminibus a Collinsono olim missis; constitit esse novum genus, sed non à sexu; at vero à calyce et stigmatibus, debet enim planta hermaphrodita necessario idem genus intrare; quod est Althæa virginiana, ricini folio. Herm. lugdb. 23.

Perge bene mereri et plantarum illustratione te ipsum illustrare.

**Dabam Upsaliae, 1749, d. 28 Sept.**

**[Addressed]**
**To Georg. Dyonis. Ehret**
**London.**

## LETTER VI.

Floræ ipsius Apelli
Dionys. Ehretio.
amico antiquo,
S. pl. d.
Car. Linnæus,
Equ.

Has tibi amice Ehret offert juvenis eximius D. Dan. Solander mihi amicissimus. Pro tua in me amicitia ipsi oro ostendas rariores gazas Angliæ, ut Te patrono videat quæ ego videre vellem sed nequeam.

Quotidie mihi sese sistunt Plantæ rarissimæ a Te ad vivum ita delineatas ut nihil deficiat nisi vita; rident haec floribus et mihi toties in memoriam revocant antiquam Tuam in me amicitiam; utinam possem, uti vellem, etiamnum Te in hac vita coram intueri; sed fata videntur mihi denegare hoc oblectamentum; numquam tamen denegabunt mihi te amare, qui de Flora et de me optime meritus es. Vale egregie Ehreti et me porro ama.

Dabam Upsalia, 1759, 12 Aprilis.

[Addressed]
To Mr. Dionys. Ehret
London.

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## LETTER VII.

Antiquissimo suo Amico
D$^{no}$ G. D. Ehret
S. pl. d.
Car. Linné.

Datas a te, Vir amicissime, literas d. 18 februarii hodie accepi et grates pro his reddo maximas; lætor quod vivas vigeas et valeas. Pulcherrime delineasti novam *Theobromam*, quæ etiamnum in nostro horto virescit ut ut fructus apud nos non maturuerit, certus tamen sum quod sit genuina species quædam Theobromatis. Accepi egregias tuas figuras et Amsoniæ et Ellisiæ eosque mox tradidi Societati Scientiarum Upsaliensi, inserendas ejus actis.

Habui præterito anno *Calceolarium Fewill* florentem in horto, sed semina vix maturabat, optassem tum tuam opem in depingendo plantam pulcherrimam, male a Fewilleo delineatam, sed nullus erat mihi pictor.

Si *Loosa* mea (*Ortiga Fewill*) ullibi occurrat in hortis anglorum, oro rogoque mihi compares aliquot ejus semina, reddam pro iis sanctissime Ducatum aureum, modo semina recentissima mittas.

*Spigelia anthelmia* est certo in Hortis Anglorum, vellem etiam honestissime dare pro aliquot ejus semina quodquod peteras; vidi *Spigeliam marilandam* a Te egregie delineatam, et accepi picturam pulcherrimæ plantæ una cum specimine sicco sed plantam vivam numquam vidi.

Salutes quaeso meis verbis omnes Botanicos Londinenses opto ut cum iis diu valeas.

Recieved Aprill 3, 1769.

[Addressed]
To Mr. G. D. Ehret
in Park Street near Brook Street Grosvenor
Square London.

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## Letter VIII.

Mein sehr geschäzter Freund,

Die gütige Aufname der geringen Manschetten ist mir besonders angenehm zu erfaren gewesen, ich wünschte aber mit was besserem aufwarten zu können.

Ich habe von den beiden Proposals wegen Browns Nat. Hist. of Jamaica sogleich eines an Herrn hofrath Trew geschikt, aber nicht die Ehre gehabt einige Antwort zu erhalten. Indessen da Sie, mein wehrtester Freund, das Werk so rühmen, so bitte ich für mich auf ein Exemplar zu subscribiren.

Solte man von diesem Herrn Brown nicht einige aufgetroknete Pflanzen erhalten können?

Der Gebrauch des gemeinen Zunders Blut zu stillen ist auch unter unsern Bauern schon lange bekant gewesen. Die franzosen sind also hiervon nicht eben die Erfinder; aber dennoch wird Ihnen der Ruhm bleiben müssen dass sie ihn zuerst bei grossen Wunden und auf Arterien applicirt haben. Hier wird indessen der von den franzosen und insbesondern dem Herrn Brossard angerühmte Agaricus pedis equini facie; fungus in caudicibus nascens unguis equini facie; fungus ignarius von denen Wundarzten noch nicht gebraucht, sonst ich gerne davon zur Probe schicken wolte. Inzwischen ist die Zubereitung desselben diese: Man muss davon die weisse und harte Rinde, nebst der löcherichten und harten Substanz des Schwammes ablösen, damit nur die mitlere schwammigte Substanz, so sich unter den fingern dehnt, übrig bleibt. Diese klopft man mit einem Hammer so lange, bis sie ganz weich wird, und legt davon ein Stük, so etwas grösser als die Wunde ist, von der Seite auf, wo die Rinde nicht gesessen, auf dieses noch ein grösseres Stük oben drauf und denn den gehörigen Verband herum. So ist bei verschiedenen Amputationen der Arme und Füsse das Blut der Arterien vor ligatur glüklich gestillet worden.

ich wünsche, das denenselben diese kleine Nachricht angenehm sein möge.

Die Samen und die 2 Gemählde von der berühmten hand, wozu Sie mir in Ihrem lezten hofnung machen, werden mir höchst angenehm sein.

Unter denen Samen vor 2 Jaren war auch einer mit dem titre Faba Græcorum; er ging glüklich auf und schien einem bonen gewächse ganz ähnlich, aber kam nicht zum blühen. Solte Sie demnach hirvon wieder erhalten können, würde mir solches besonders lieb sein.

Schlieslich, Wehrtester freund, empfehle ich Ihnen das Angedenken ihrer vortreflichen Tabularum plantarum inständigst. Ist es möglich, so setzen Sie solche doch fort! sie werden ein Werk ausmachen das nicht seines gleichen hat und Ihnen zu unsterblichem Ruhm gereichen. Vielleicht können Sie die dazu erforderliche Zeit vorteilhafter anwenden, aber in der That nicht nützlicher, nicht rühmlicher noch schöner.

ich bin mit ewiger freundschaft,

der verbundenster Diener,

ANDREAE.

Hannover,
d. 14 febr. 1755.

[Addressed] To
Mr. George Denis Ehret
at Mr. Rhodes's in Park Street
Grosvenor Square
London.

[Endorsed]
The methode how to prepare Agarike.

## TRANSLATION OF LETTER VIII.

My highly esteemed Friend,—

I was very gratified to hear of your kind reception of the little ruffles, but I wished I could have sent you something better. I immediately sent one of the two prospectuses of Brown's work on the Nat. Hist. of Jamaica to Councillor Trew, but he has not yet favoured me with a reply. As you recommend the work so strongly, my esteemed Friend, I should be much obliged to you if you would kindly subscribe for a copy for me. Cannot we obtain some dried plants from this Mr. Brown?

The use of common tinder as a styptic has long been known among our own peasantry; thus the French cannot actually claim the discovery; but they are nevertheless entitled to the credit of having been the first to apply it to serious wounds and arteries. But the Agaricus pedis equini facie; Fungus in caudicibus nascens unguis equini facie; Fungus ignarius, recommended by the French and especially by M. Brossard, is not yet used here by surgeons, or I should have been glad to send you some samples. The mode of preparation is as follows: The white hard outer rind, and the hard porous part of the fungus must

be removed, so that only the middle spongy substance, which yields to the pressure of the fingers, is left. This must be beaten with a hammer till it is quite soft, and a piece rather larger than the wound must be laid over it from the side, taking care not to place the part next to the rind on the wound. A larger piece must be placed over this, and the whole must then be covered with the ordinary bandage. Thus in several cases of amputation of the arms and feet, the bleeding of the arteries has been successfully staunched before the application of ligatures.

I hope that you will be pleased with this little information. I should be extremely pleased to receive the seeds and the two drawings from so distinguished a hand, which you promise me in your last letter. Among the seeds which you sent me 2 years ago was one marked Faba Græcorum. It sprouted well, and looked like a kind of bean but did not flower. If you could get any more of the same kind, I should be particularly obliged.

In conclusion, good Friend, I strongly advise you to continue your excellent Tabularum Plantarum. If possible, do continue it! It would be an unequalled work, which would give you an undying reputation. You might possibly be able to employ your time more profitably, but certainly not more usefully, laudably, or delightfully.

With every expression of my unceasing regard, believe me,
Your most obedient Servant,
ANDREAE.

Hanover,
14 February, 1755.

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## A Letter to Dr. Brown.

### LETTER IX.

I never coveted any Book, I know not by what Instinct, with more ardour desire than yours; at length I understood that an English Gentleman residing at Stockholm had got it; I entreated him to lend it me for a fortnight, and obtained it. I spent day and night in reading it through; I read it over, but never enough, and returnd it. Good God, how was I transported with desire of a book infinetly to be commended. Two things I particularly observed therein, which I have not met with in other Authors. The first was the Author's most honest Candour and human disposition; who is not sharp upon any, severe to non, nor enveighs against others, as now the Custom amongst the vulgar herd of authors, but candidly inculcates his own observations without taxing others, because the could not see these things the wished to inspect, but not in theire power. The other thing I noted was the writer's perspicuity, who has set forth his Plants so correctly, and so exactly to the Life, that I could see as it were the very Plants themselves before me; nor did I discern anything to be wanting which might tend to the Illustration thereof.

I was surprised to see many more new Genera than any other in this age has propounded and constructed.

The most evident of which, whereof I was fully satisfied, I have taken out and adopted: as *Comocladia*, *Moniera*, *Spathe*, your *Scurrula*, *Amyris*, *Weinmannia*, your *Volkameria*, *Erythroxylum*, *Xylopicrum*, *Ellisia*, *Stemodiacra*, *Zigia*, *Canella*, *Blakea*, *Cedrela*, *Omphalandria*, *Pharus*, *Trophis*, *Batis*, *Iresine*, *Calicanthus* or the *Bevreria* of Ehret, *Gigalobium*, etc.

Those which seemed more intricate to me because I could not inspect them, were the following:—

*Cladium.*
*Crossopetalum.*
*Macrocnemium.*
*Melicoccus.*
*Siralium.*
*Dodonæa.*
*Lygostema.*
*Lysianthus.*
*Buttneria.*
*Melonium.*
*Catonia.*
*Hypolate.*
*Petersia.*
*Psictotrophum.*
*Metopium.*
*Borbilus.*
*Portlandia.*
*Trichogamila*, &c.
*Coccocipsilum.*
*Chiococca.*
*Sarcomphalus.*
*Cuphæa.*
*Erithalis.*

Perhaps if I were to see them, they would become equally perspicous to me. Some of them I had a notion might be referred to other Genera?:—

as *Achimenes* ......*Columnea* certain.
*Irsiola* .........*Cissus*?
*Coreta* .........*Corchorus*?
*Iron* ............*Sauvagesia* certain.
*Xantoxylum* ...*Aralia.*
*Halesia* .........*Guetharda* certain.
*Acisanthera* ...*Rhexia*?
*Melanium*
*Parsonsia* } ...*Lythrum.*
*Cuphæa*

*Buceros* ........... *Rhizophora*?
*Trichilia* .........*Melia.*
*Callicoccus*......
*Ehretia* .........
*Bevreria* .........
*Gerascanthus*... } *Cordia arborescens.* with a forked style —and two cell'd seed.
*Varronia* ......
*Metopium* ......
*Portlandia* an *Rondeletia*?

I may perhaps be mistaken in several, but thus I guess at first sight, of Plants I have not seen.

I was no less pleased with your Animals, they are all curious and surprising, but my time was not sufficient to analyse all, though I picked out several.

I doubt if any other Reader can peruse this work of your with greater delight and admiration. Everything you have noted concerning the obscure Characters of the American Plants, and which were never to be learned before, but from Plumier's observations; I have corrected in my book, that whenever it is reprinted, you will see I have carefully followed your instructions.

I would give anything could I one day or other be with you, to see your dried plants, and to give the all a nice inspection and thorough examination.

But since these Wishes of mine are in vain, I earnestly beg the Favour of you to spare me a dried specimen of those you have in greater plenty.

What you have delivered concerning the Spigelia against

Worms, is very wonderfull, since the like never was met with in the Medical art; for which alone you ough to be honoured with a Golden Statue. C. Linnæus, Eq.

Upsal, 19th $8^{br}$, 1756.

[Endorsed]

Translation of Dr. Linn: Letter to Dr. Brown when he first received his Book of his hist. of Jam: in the year 1756.

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## Letter X.

### To Mr. Peter Collinson.

Sir,

I can no longer omit to testify the respect I owe to such a Friend, to whom science is indebted for so many curious presents; myself for more, for Letters, for seeds, and for various favours wherewith you never thought much at any time to in reach me.

As the Spring in these parts was sharp and severe to us and our gardens, so the autum is now mild and of longer continuance.

My Discipel *Rolander* is returned from Surinam, laden with the spoils of the three kingdoms of nature; but he still continues at Stockholm nor is yeat arrived at Upsal; from which, as from his Letter I have been informd, we shall have stores of new things.

Kalm is in good health, the second volume of his Travels is just published; wherein with just Encomiums he extolls our friend Bartram, which I beg you would signify to him

*Osbeck's* Travels in China will be printed this wintter.

The Travels of *Hasselquist* into Egypt and the Holy Land are now in the Press.

From *Loefling* who is in Mexico and countrys adjacent, I have recieved no Letters this year and a half.

Köhler is still at Rome.

This is the state of my Pupils.

I have not yeat received Brown's History of Jamaica, but I saw it at a friend's house of whom I borrowed it for a dozent days. I read it over with the greatest attention and admiration; and no author did I ever quit more instructed. Pray be so kind to take off my letter which is annexed to this, seal it and send to the worthy Author, who has deserved so much of Botanic Science beyond all others.

I am preparing a new Edition of my Systema Naturæ, in which I shall enumerate every species of animals known to me from the greatest to the least.

May God prolong you Life and preserve you in Health and Safety. C. Linnæus.

Upsal, October 19, 1796.

My Gardner Niezel is dead, nor do I know where to find one worthy to succeed him.

Pray give my thanks to Mr. Ehret for his *Bevreria* most neatly drawn, wherther the plant is Male & Female is wanting? and tell him I have received his 9, 10, 11, and 12 Plates, and that I daily view them with admiration.

## LETTER XI.

London, July 27, 1754.

MY DR. FRIEND,

Doctor Hempe introduced to me a young Gentleman yesterday, one Mr. Oeder, who is sent over by the King of Denmark's order to make observations in order for the laying out a Botanic Garden of which he is to be Professor, he has been bred under Haller, and knows Büttner, he is a very modest discreet young man; I shew'd him my little collection, which pleased him and begs to attend me to the sea-side next week, when we shall take a trip towards the Isle of Sheppey in Kent. I hartely wish you were of the party, but I fear we set out too soon, which is on Tuesday next; he proposes to acquire this knowledge as he is intended to make a progress, through Norway as Linnæus did through Lapland, and particularly he is to make the sea-coast his Tract in that vast extent of country. I understand by Dr. Hempe that he has something to propose to you to establish you in the new projected Physick Garden. I told him I imagin'd you would rather live under this government than any arbitrary power with twice as much, I dont find the King or Queen are curious and that scheme is projected only by a favourite of the King's who is his grand Marshall. The Garden is not yet laid out, so that the view of your grand post is yet very distant. I believe in 10 Days time, this Gentleman proposes to go to Oxford to see the Garden and Library. The Gentleman longs to know where you are, which I would not inform him till I gave you this Notice.

Mr. David Van Royen has sent me by him one of his Inauguration Orations directed to me in a polite manner by himself on his being admitted Botanic Professor at Leyden. My Wife and Sister send their compliments to you and be assured

I am my Dr. Friend,
Yours most heartily,
JOHN ELLIS.

Dr. Brown Salutes you unknown, he knows your merit and I dont doubt you'll be properly gratified, but that we'll take care to fix, when we all have the pleasure to meet.

Let me hear from you as soon as you can.

## ABSTRACTS OF PAPERS.

### On the Power of Penetrating the Skins of Animals possessed by the Seed of *Stipa spartea*. By ROBERT MILLER CHRISTY, Esq. (Communicated by ALFRED W. BENNETT, M.A., F.L.S.)

[Read 21st February, 1884.—Abstract.]

THIS wide-spread species forms a more succulent grass than any other of the prairie grasses, and is locally named "Buffalo-grass," "Spear-oat," &c. The fruits ripen in July, and the awns penetrate the hides of sheep and dogs, causing much damage to the settlers. They are very like those of *Stipa pennata* described by Francis Darwin, but about $\frac{7}{8}$ inch in length, with an awn nearly 2 inches long, twisted nine or ten times; rather more than 3 inches beyond, it is produced into a delicate bristle, which does not twist, with many small teeth pointing upward: when wet the whole awn is perfectly straight. The author experimented in August, November, and December upon *S. spartea* and *S. pennata*, and found that actual penetrative power was possessed by the hygrometric-awned seeds. Butchers repeatedly found these seeds imbedded about half an inch beneath the skin of animals slaughtered by them, and animals have not unfrequently to be destroyed on account of their being infested with these fruits. The author considers that Prof. Macoun is not justified in treating the accounts of butchers and farmers with ridicule.

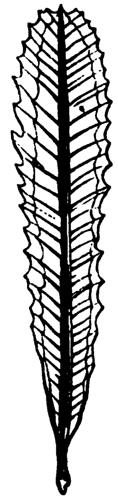
### Note on a Remarkable Variation of *Banksia marginata*, Cav. By J. G. O. TEPPER, F.L.S. &c.

[Read 17th April, 1884.]

ON October 11th last I met with a small plant of *Banksia marginata*, in the Mount-Lofty Ranges east of Adelaide, which at once attracted my attention on account of the very different appearance it presented as compared with the usual form of the species. Growing on a steep scrubby hillside, facing N.W. and formed of poor sandy soil thinly covering grey quartzite between the numerous fragments, it exhibited such a regular and decided variegation in the leaves that, could it be rendered permanent by cultivation, a place among gardeners' ornamental shrubs would be assured for it.

The size of the whole scarcely exceeded 12 inches, and it bore but few branches, which, as well as the stem, were grey in colour and slightly tomentose, especially near the summit, and branched trichotomously (in one or two instances, dichotomously). The leaves formed very closely packed rosettes at the apex of every branchlet, but became more and more distant towards the lower end, where also they had lost their position at right angles to the axis, and had assumed one more or less parallel to it and toward the apex of the branchlet.

The midrib is thin, but quite distinct, and paler than the remainder of the leaf, the adjoining portions of which are dark shining green, but the margins of both sides and apical extremity are *clear golden yellow*, scarcely showing a trace of the shading of the green and yellow into each other at the boundary, though the latter is somewhat uneven. This yellow margin is wider in older than in younger leaves, though present in all, extending from the place where the peduncle merges into the blade to the apex. The margins are more or less regularly serrated, and scarcely, if at all, recurved, but bent longitudinally upwards at considerable angles. The transverse veins are distinct, numerous, very fine, and their reticulation obscure. The underside is uniformly pale, almost white, and the yellow of the upper border scarcely noticeable. The youngest portions are of brownish tints, soft and densely villous. The terminal buds are easily detached by shaking; they are developed in twos and threes.



**Mature leaf of variegated form of *Banksia marginata*, Cav.**

The accompanying sketch of a leaf (natural size) will show, in connexion with the above, that the variety differs considerably from the description of *Banksia marginata* given in Bentham's Flora Austr. v. p. 553; yet the latter is the only species occurring in the neighbourhood for many miles around. Neither flowers nor fruit were seen, the plant being too young; but I was told by a gentleman, whom there is no reason to doubt, that a larger tree did exist in another locality among the same hills some miles to the south.

Have we here an instance of the spontaneous production of a new variety or species, or the last remnant of one near extinction?

## Donations to Library, 1883–84.

## Volumes and more important pamphlets, exclusive of exchanges, chiefly from private individuals.

Achepohl, L. Das Niederrheinisch-Westfälische Steinkohlengebirge. Atlas der fossilen Fauna und Flora. Parts 1–9. Fol. Essen, 1881–1883. **F. Crisp.**

Adams, H. G. Humming Birds. 8vo. Lond., 1856. **Dr. J. Murie.**

Agricultural Students' Gazette. Vol. i. 8vo. Cirencester, 1884. **Prof. J. A. Harker.**

Albrecht, Prof. P. (1) Epiphyses Osseuses sur les Apophyses Epineuses des Vertèbres d'un Reptile.—(2) Mémoire sur le Basiotique, un nouvel os de la Base du Crâne.—(3) Pelvisternum des Edentés.—(4) Sur les Copulæ Intercostoïdales et les Hémisternoïdes du Sacrum des Mammifères. 8vo. Brussels, 1883. And 5 other pamphlets by same Donor. **Author.**

Allen, Grant. Flowers and their Pedigrees. 8vo. Lond., 1883. **Dr. Murie.**

Anderson, Prof. J. Cat. of Fishing Appliances, Internat. Fisheries Exhib. Govt. of Bengal. 8vo. Calcutta, 1883. **India Office.**

Annals and Magazine of Natural History. 5th ser. vols. xi., xii. 8vo. Lond., 1883. **Dr. W. Francis.**

Armandi, Chev. P. Histoire Militaire des Eléphants. 8vo. Paris, 1843. **Dr. J. Murie.**

Atkinson, E. T. Notes on the Zoology of the N.W. Provinces of India. 8vo. St. Leonard's-on-Sea, 1882. **Author.**

Balfour, Prof. I. B. Socotra and its Associations. 8vo. Lond., 1883. **Author.**

Bean, Tarleton H. Catalogue of the Collections of Fishes, Internat. Fisheries Exhib., Lond., 1883. 8vo. Washington, 1883. **G. Brown Goode.**

Bernays, L. A. Cultural Industries for Queensland. 8vo. Brisbane, 1883. **Author.**

Blytt, A. (1) Bidrag til Kundskaben om Norges Soparter. 8vo. Christiania, 1882.—(2) Clastoderma de Baryanum. 8vo. Christiania, 1882.—(3) Nye Bidrag til Kundskaben om Karplanternes Udbredelse i Norge. 8vo. Christiania, 1882.—(4) Theorien om vexlende Kontinentale og insulare Klimater anvendt paa Norges Stigning. 8vo. Christiania, 1881. **Sir J. Lubbock.**

Borre, A. Preudhomme de. (1) La Feuille qui se Transforme en Insecte. 8vo. Bruxelles, 1883.—(2) Liste des Mantides du Musée Roy. d'Hist. Nat. de Belg. 8vo. Bruxelles, 1883. **Author.**

Bosquet, J. Description des Entomostracés Fossiles des Terrains Tertiaires de la France et de la Belgique. 4to. Brussels, 1850. **F. Crisp.**

Bourguet, M. Traité des Pétrifactions. 4to. Paris, 1742. **C. Berjeau.**

Braithwaite, Dr. R. The British Moss Flora. Fam. vii. Dicranaceæ, Part 3. Roy. 8vo. Lond., 1883. **Author.**

Britten, J. (1) Sketch of the Botany of Norfolk. 4to. Sheffield, 1883.—(2) European Ferns. 1 vol. 4to. Lond. [1883]. **Author.**

Brongniart, C. (1) Aperçu sur les Insectes Fossiles en Général et Observations sur quelques Insectes des Terrains houillers de Commentry (Allier). 8vo. Montluçon, 1883.—(2) Les Hyménoptères Fossiles. 8vo. Paris, 1881. And 10 other pamphlets by same Donor. **Author.**

Brook, G. Notes from my Aquarium.—i.–vi. 8vo. Huddersfield, 1883. **Author.**

Brown, J. T. Whale Fishery and its Appliances (Int. Fish. Exhib. Lond.). 8vo. Washington, 1883. **G. Brown Goode.**

Bulletin of Museum of Comp. Zoology at Harvard College. Vol. xi. pts. 5, 6.

Campbell, F. M. Spiders of the Neighbourhood of Hoddesdon. 8vo. Hertford, 1883. **Author.**

Candolle, M. C. de. Rides Formées à la Surface du Sable Déposé au Fond de l'Eau et autres Phénomènes analogues. 8vo. Genève, 1883. **Author.**

Candolle, M. Alph. de. (1) Darwin considéré au Point de Vue des Causes de son succés et de l'importance de ses Travaux. 8vo. Genève, 1882.—(2) Nouvelles Remarques sur la Nomenclature Botanique. 8vo. Genève, 1883. **Author.**

Carpenter, Dr. W. B. On an Abyssal Type of the Genus *Orbitolites*. 4to. Lond., 1883. **G. J. Romanes.**

Caruel, Prof. T. Nuovo Giornale Botanico Italiano. Vol. xv. 8vo. Firenze, 1883. **T. Caruel.**

Catalogue of Exhibits in the New South Wales Court (Int. Fish Exhib.). 8vo. Lond., 1883. **E. P. Ramsay.**

Catalogue Swedish Coll. Fish. Exhib. Edinb., 1882. **Oscar Dickson.**

Certes, A. Note sur les Parasites et les Commensaux de l'Huître. 8vo. Paris, 1882. **Author.**

Christy, T. (1) Ensilage. 8vo. Lond., 1883.—(2) New Commercial Plants and Drugs. No. 7. 8vo. Lond., 1884. **Author.**

Clarke, C. B. Monographiæ Phanerogamarum.—Vol. v. Cyrtandreæ. 8vo. Paris, 1883. **Author.**

Cobălcescu, G. Studii Geologice so Paleontologice asupra Unor Teràmuri Tertiare diu unile Parti Ale Romaniei. 4to. Bucuresci, 1883. **Author.**

Cobbold, Prof. T. S. (1) Destruction of Fish by Internal Parasites (Int. Fish. Exhib.). 8vo. Lond., 1883.—(2) The Grouse Disease. 8vo. Lond., 1873. And 50 other pamphlets. **Author.**

Colenso, Rev. W. Three Literary Papers: I. and II. On Nomenclature. III. On Macaulay's 'New Zealander.' 8vo. New Zealand, 1883. **Author.**

Collett, R. Norges Fiske, med Bemærkninger om deres Udbredelse. 8vo. Christiania, 1875. **Dr. J. Murie.**

Comes, Prof. O. Reliquæ Micologiche Notarisiano. 4to. Portici, 1883. **Author.**

Cooke, M. C. Fungi Britannici Exsiccati. Cent. i.–vii. **F. Crisp.**

Dallas, W. S. Elements of Entomology. 8vo. Lond., 1857. **Author.**

Day, Dr. F. Catalogue of Exhibits in Indian Section, Int. Fish. Exhib. 8vo. Lond., 1883. **India Office.**

——. Why is Fish so Dear? 8vo. Cheltenham, 1884. **Author.**

Debeaux, O. Florule de Shang-Hai. 8vo. Paris, 1871. **F. B. Forbes.**

Duncan, Prof. P. M. On the Madreporarian Genus *Phymastræa*. 8vo. Lond., 1883. **Author.**

Duthie, J. F., and J. B. Fuller. Field and Garden Crops of North-Western Provinces and Oudh. Parts 1 & 2. 4to. Roorkee, 1882–83. **J. F. Duthie.**

Entomologisk Tidskrift. Vols. i.–iv. 8vo. Stockholm, 1880–83. **J. Spångberg.**

Entomologist. Vol. xvi. 8vo. Lond., 1883. **T. P. Newman.**

Entomologist's Monthly Magazine. Vol. xx. 8vo. Lond., 1883–84. **Editors.**

Ernst, A. Resumen del Curso de Zoologia. 8vo. Caracas, 1882. **Author.**

Evelyn, John. Silva, or, a Discourse of Forest-trees and the propagation of Timber. 4th ed. Vols. i. & ii. 4to. York, 1812. **Winslow Jones.**

Feltoe, Rev. C. L. Memorials of John Flint South. 8vo. Lond., 1884. **Mrs. South.**

Fisheries of Bombay Presidency (Int. Fish. Exhib.). Fol. Bombay, 1883. **Dr. F. Day.**

Fitzgerald, R. D. Australian Orchids. Vol. i. Fol. Sydney, 1874–82. **Author.**

Fleming, J. Philosophy of Zoology. Vols. i., ii. 8vo. Edinb., 1882. **F. Crisp.**

Fleming, Rev. F. Southern Africa, a Geography and Natural History of. (Appendix of Fauna and Flora.) 8vo. Lond., 1858. **Dr. J. Murie.**

Foslie, M. Bidrag til Kundskab om de til Gruppen Digitatæ horende Laminarier. 8vo. Christiania, 1883. **Sir J. Lubbock.**

**Friedländer, J. R.** (1) Bibliotheca Historico-Naturalis et Mathematica, 1883. 8vo. Berlin, 1883.—(2) Naturæ Novitates. Vol. i. 8vo. Berlin, 1884. **Author.**

**Gardner, J. S., and Baron C. Ettingshausen.** Monograph of the British Eocene Flora. Vol. i. Filices. 4to. Lond., 1879–82. **J. S. Gardner.**

**Godwin-Austen, Lieut.-Col. H. H.** Freshwater Shells of Socotra collected by Prof. I. Bayley Balfour. Part iii. 8vo. Lond., 1883. **Author.**

**Gorkom, Karel Wessel van.** Handbook of Cinchona Culture. (Transl.) 8vo. Lond., 1883. **B. Daydon Jackson.**

**Gosch, C. C. A.** On Latreille's Theory of 'Le Segment Médiaire.' 8vo. Copenhagen, 1883. **Author.**

**Gray, Prof. Asa.** (1) Contributions to North-American Botany. I. 8vo. 1883.—(2) Review of De Candolle's 'Origin of Cultivated Plants'; with Annotations upon certain American Species. 8vo. 1883.—(3) Some points in Botanical Nomenclature; a Review of 'Nouvelles Remarques sur la Nomenclature Botanique, par M. Alph. de Candolle,' Geneva, 1883. 8vo. 1883. —(4) Synoptical Flora of North America. Vol. i., pt. 2. Caprifoliaceæ–Compositæ. Roy. 8vo. New York, 1884. **Author.**

**Grimm, O.** Fishing and Hunting on Russian Waters. 4to. St. Petersburg, 1883. **Dr. J. Murie.**

**Guilfoyle, W. R.** Catalogue of Plants under Cultivation in Melbourne Botanic Gardens. 4to. Melbourne, 1883. **Author.**

**Gunn, T. E.** Catalogue British Sea- and Freshwater Fish and Fish-eating Birds, &c. (Int. Fish. Exhib.) 8vo. Norwich, 1883. **Author.**

**Haast, J. von.** (1) Humanism and Realism in their Relations to Higher Education. 8vo.—(2) The Progress of Geology. 8vo. Dunedin, 1883. **Author.**

**Harkness, Dr. H. W.** Footprints found at the Carson State Prison. 8vo. San Francisco, 1882. **Author.**

**Haswell, W. A.** Catalogue of Australian Stalk- and Sessile-eyed Crustacea. 8vo. Sydney, 1882. **Trustees Austral. Mus.**

**Hector, J.** Handbook of New Zealand. (3rd ed.) 8vo. Wellington, 1883. **Author.**

**Henslow, Rev. G.** (1) Homology and Analogy of Plant Organs. 8vo. Hertford, 1880.—(2) The Fertilization of Plants. 8vo. Watford, 1877. **Author.**

**Hickson, S. J.** On the Ciliated Groove (Siphonoglyphe) in the Stomodæum of the Alcyonarians. 4to. Lond., 1883. **G. J. Romanes.**

——. Structure and Relations of *Tubipora*. 8vo. Lond., 1883. **Author.**

**Higgins, H. H.** Notes by an Invalid Field Naturalist at Grange-over-Sands. 8vo. Liverpool, 1883. **Author.**

**Hinde, G. J.** Catalogue of Fossil Sponges in Geological Depart. of British Museum. 4to. Lond., 1883. **Trustees Brit. Mus.**

——. Annelid Remains from Silurian Strata of Gothland. 8vo. Stockholm, 1882. **Author.**

**Hogg, A.** The Antiquities of Davan and Kinnord. **Author.**

**Hoggan, Drs. G. and F. E.** Dégénération et Régénération du Cylindre-Axe. 8vo. Paris, 1882. **Authors.**

**Holdsworth, E. W. H.** Apparatus for Fishing. (Int. Fish. Exhib.) 8vo. Lond., 1883. **Author.**

**Hooker, Sir J. D.** The Flora of British India. Vols. i.–iii. 8vo. Lond., 1875–83. **Author.**

**Hubrecht, Prof.** Oyster Culture and Oyster Fisheries in the Netherlands. 8vo. Lond., 1883. **Author.**

**Hudleston, W. H.** Deep-Sea Investigation. 8vo. Lond., 1882. **Author.**

**Hutton, Capt. F. W.** (1) Notes on some New-Zealand Land Shells. 8vo.—(2) Revision of the Land Mollusca of New Zealand. 8vo.—(3) On the Lower Gorge of the Waimakariri. 8vo. Canterbury, N.Z., 1883.—(4) On the Origin of the Fauna and Flora of New Zeeland, 8vo. Dunedin, 1884. **Author.**

**Jackson, J. R.** Official Guide to Museums of Economic Botany Roy. Gardens, Kew. Ed. —. 8vo. Lond., 1883. **Dr. J. Murie.**

Johnstone, Rev. A. (1) Botany Notes for Students. 12mo. Edinb., 1883.—(2) Botany Reading Books. Vols. i. & ii. Lond., 1883. **Author.**

Kiær, F. C. Genera Muscorum Macrohymenium et Rhegmatodon revisa specieque nova aucta exposuit. 8vo. Christiania, 1882. **Sir J. Lubbock.**

Kidston, R. Affinities of Genus *Pothocites*. 8vo. Lond., 1883. **Author.**

Koch, A. (1) Oesterreichische Monatsschrift für Thierheilkunde mit Berücksichtigung der Viehzucht und Landwirthschaft. Bände iv.–vii. 4to. Wien, 1880–83.—(2) Revue für Thierheilkunde und Thierzucht. Bände i.–vii. 8vo. Wien, 1878–1883. **Prof. T. S. Cobbold.**

Kölliker, Prof. A. Ueber die Chordahöle und die Bildung der Chorda beim Kaninchen. 8vo. Würzburg, 1883. **Author.**

Lang, Dr. H. C. The Butterflies of Europe. 2 vols. Roy. 8vo. Lond., 1883. **Author.**

Lawes, J. B., and J. H. Gilbert. Experiments on mixed Herbage of Permanent Meadow. Parts 1 & 2. 4to. Lond., 1880–82. **Dr. J. H. Gilbert.**

Lee, H. Sea Monsters unmasked. 8vo. Lond., 1883. **Author.**

Leidy, Prof. J. (1) *Urnatella gracilis*, a Freshwater Polyzoan. Fol. Philad., 1884.—(2) Parasites of the Termites. 4to roy. Philad., 1881. **Author.**

Leydig, Dr. F. Untersuchungen zur Anatomie und Histologie der Thiere. 8vo. Bonn, 1883. **Sir J. Lubbock.**

Lintner, J. A. Report, Injurious Insects of New York. 8vo. Albany, 1882. **Sir J. Lubbock.**

Mathews, W. Flora of Clent and Lickey Hills and Neighbouring Parts of the County of Worcester. 8vo. Lond., 1881. **B. Daydon Jackson.**

McCoy, F. Prodromus of Zoology of Victoria. Decade viii. 8vo. Melbourne, 1883. **P. Macgillivray.**

Macgillivray, P. H. Descriptions of new or little-known Polyzoa. Parts i.–v. 8vo. Melbourne, 1881–83. **Author.**

McLachlan, R. Monographic Revision of the Trichoptera and Supplement. 2 vols. 8vo. Lond., 1874–84. **Author.**

Mégnin, P. On the Gapes Disease in Gallinaceous Birds, and on the Parasite which causes the Disease, the Red Worm of Gamekeepers. 8vo. Lond., 1883. **Lord Walsingham.**

Milne-Edwards, Prof. M. A. (1) L'Expédition du Talisman. 8vo. Paris.—(2) Rapport sur la Faune Sous-Marine dans les Grandes Profondeurs de la Méditerranée et de l'Océan Atlantique. 8vo. Paris, 1882. **Author.**

Moloney, Captain C. A. West-African Fisheries. (Int. Fish. Exhib.) 8vo. Lond., 1883. **Author.**

Moore, F. The Lepidoptera of Ceylon. Parts 7–8. 4to. Lond. **Govt. of Ceylon.**

Morren, E. La Belgique Horticole, Annales de Botanique et d'Horticulture. 8vo. Liége, 1883. **M. C. Cooke.**

Mueller, Baron Ferd. von. (1) Plants indigenous around Sharks Bay and Vicinity. Fol. Perth, 1883.—(2) Observations on New Vegetable Fossils of the Auriferous Drifts. Decade 2. 4to. Melbourne, 1883. **Author.**

——. Systematic Census of Australian Plants. Melbourne, 1882. **Victorian Govt.**

Murray, J. A. Plants and Drugs of Sind. 8vo. Lond. & Bombay, 1881. **Author.**

Nature. Vols. xxviii., xxix. 4to. Lond., 1883–84. **A. Macmillan.**

Newton, Prof. A. Birds. (Encycl. Brit.) 4to. Edinb., 1882. **Author.**

Nilsson, S. Skandinavisk Fauna. 3 vols. 8vo. Lund, 1847–58. **Dr. Murie.**

Norman, Rev. A. M. Presidential Address, Tyneside Naturalists' Field Club. 1881. 8vo. Newcastle-upon-Tyne, 1883. **Author.**

Olsen, O. T. Fisherman's Nautical Almanac. 8vo. Grimsby, 1883. **Author.**

Osten Sacken, Baron C. R. (1) Western Diptera of U.S. 8vo. Washington, 1877.—(2) Enumeration, Diptera of the Malay Archipelago. 8vo. Geneva, 1881.—(3) Diptera from the Philippine Islands. 8vo. Berlin, 1882. And 8 other Entomol. pamphlets in 1 vol. 8vo. **Author.**

Owen, Sir R. Essay on Conario-Hypophysial Tract and Aspects of the Body in Vertebrate and Invertebrate Animals. 8vo. Lond., 1883. **Author.**

**Packard, A. S.** (1) New Species of *Polydesmus* with eyes. 8vo. Philad., 1883.—(2) Moulting of the Shell in *Limulus*. 8vo. Philad., 1883.—(3) Classification of the Linnean Orders of Orthoptera and Neuroptera. 8vo. Philad., 1883.—(4) Repugnatorial pores in Lysiopetalidæ. 8vo. Philad., 1883.—(5) Revision of the Lysiopetalidæ. 8vo. Philad., 1883.—(6) Systematic position of the Archipolypoda. 8vo. Philad., 1883.—(7) Number of segments in head of winged Insects. 8vo. Philad., 1883. **Author.**

**Palmén, Dr. J. A.** Ueber Paarige Ausführungsgänge der Geschlechtsorgane bei Insecten. 8vo. Helsingfors, 1884. **Sir J. Lubbock.**

**Parker, Prof. T. Jeffery.**—(1) Connection of the Air-bladders and the Auditory organ in the Red Cod (*Lotella bacchus*). 8vo.—(2) On the Gravid Uterus of *Mustelus antarcticus*.—(3) Notes on the Anatomy and Embryology of *Scymnus lichia*. 8vo. Wellington, 1882. **Author.**

**Pascoe, F. P.** (1) Notes on Natural Selection and the Origin of Species. 8vo. Lond., 1884.—(2) The Student's List of British Coleoptera. 12mo. Lond., 1882. **Author.**

**Pasquale, G. A.** Flora Vesuviana. 4to. Napoli, 1869. **Dr. R. C. A. Prior.**

**Pelzeln, A. von.** Brasilische Säugethiere. 8vo. Wien, 1883. **Author.**

**Plateau, F.** Recherches sur la Force Absolue des Muscles des Invertébrés. Parts i., ii. 8vo. Bruxelles, 1883–1884. And several other pamphlets. **Author.**

**Poli, A.** Contribuzioni alla Istologia Vegetale. 8vo. Firenze, 1884. **Author.**

**Porritt, G. T.** List of Yorkshire Lepidoptera. 8vo. Leeds, 1883. **Author.**

**Preston, Rev. T. A.** Wiltshire Rainfall 1883. 4to. Marlborough, 1884. **Author.**

**Proceedings**, Perthshire Society of Natural Science. Vol. i. pts. 1–3. 4to. Perth, 1881–83. **Dr. F. Buchanan-White.**

**Proceedings**, Scientific Association of Trinidad. 8vo. Port of Spain, 1882. **R. J. L. Guppy.**

**Proceedings**, Society for Psychical Research. Vol. i. pts. 1–3. 8vo. Lond., 1883. **Council Soc.**

**Ramsay, Alex.** The Scientific Roll. Vol. i. 8vo. Lond., 1882–83. **Author.**

**Ramsay, Edw.** Catalogue, Collection of Fossils in the Australian Museum. 8vo. Sydney, 1883. **Trustees Australian Mus.**

——. Catalogue of Exhibits in the New South Wales Court, Int. Fish. Exhib., 1883. 8vo. Lond., 1883. **Commissioners.**

**Rathbun, R.** Collection of Economic Crustaceans, Worms, Echinoderms, and Sponges. (Intern. Fish. Exhib. Lond.) 8vo. Washington, 1883. **G. Brown Goode.**

**Regnault, M. B.** Considérations sur les Rapports des Lépidodendrons, des Sigillaires et des Stigmaria. 8vo. Paris, 1883. **Author.**

**Report**, Fisheries of Tasmania. Fol. Hobart, 1883. **Commissioners.**

**Report**, Geological and Natural History Survey of Canada for 1880–82, and Maps of the Report. 8vo. Montreal, 1883. **Survey.**

**Report**, Hackney Microscopical Society, 1882–83. 8vo. Lond., 1883. **M. C. Cooke.**

**Report** of the Australian Museum for 1882. Fol. Sydney, 1883. **Trustees.**

**Report** of Meeting of the British Association (Southampton). 8vo. Lond., 1883. **Council Brit. Assoc.**

**Report** Roy. Com., Oyster Culture Association. Fol. Sydney, 1876–77. **E. P. Ramsay.**

**Retzius, Prof. G.** Das Gehörorgan der Wirbelthiere. Vol. i. Fol. Stockholm, 1881. **Author.**

**Ridgway, R.** Catalogue of Aquatic and Fish-eating Birds, Int. Fish. Exhib., Lond. 8vo. Washington, 1883. **G. Brown Goode.**

**Riley, C. V.** Third Report of United States Entomological Commission. 8vo. Washington, 1883. **Sir J. Lubbock.**

**Rodrigues, J. Barboza.** (1) Genera et Species Orchidearum Novarum. II. 8vo. Sebastianopolis, 1881–82.—(2) Les Palmiers, Observations sur la Monographie de cette Famille dans la Flora Brasiliensis. 8vo. Rio de Janeiro, 1882.—(3) Structure des Orchidées. 8vo. Rio de Janeiro, 1883. **Author.**

Romanes, G. J. Mental Evolution in Animals, with a Posthumous Essay on Instinct by Charles Darwin. 8vo. Lond., 1883. **Author.**

Russel, A. The Salmon. 8vo. Edinb., 1864. **Dr. J. Murie.**

Saint Lager, Dr. Des Origines des Sciences Naturelles suivies de Remarques sur la Nomenclature Zoologique. 8vo. Paris, 1883. **Author.**

Sars, Dr. G. A. (1) Bidrag til Kundskaben om Norges Arktiske Fauna. 8vo. Christiania, 1878.—(2) Carcinologiske Bidrag til Norges Fauna. I. Monograph. Mysider. 4to. Christiania, 1879.—(3) Oversigt af Norges Crustaceer med forelöbige Bemerkninger over de ny aller mindre wellgendk Arten. **Sir J. Lubbock.**

Schlich, Dr. W. Review, Forest Administration, British India, 1882–83. **India Office.**

Science Gossip. Vol. xix. Roy. 8vo. Lond., 1883. **Editor.**

Scudder, S. H. (1) The Pine Moth of Nantucket (*Retinia frustrana*). 8vo. Boston, 1883.—(2) The Devonian Insects of New Brunswick. 4to. Boston, 1880. **Author.**

Seebohm, H. Siberia in Asia. 8vo. Lond., 1882. **Author.**

Seward, Anna. Memoirs of the Life of Dr. Darwin. 8vo. Lond., 1804. **H. O. Huskisson.**

Smart, A. Germs, Dust, and Disease. 8vo. Edinb., 1883. **Dr. J. Murie.**

Sörensen, W. Om Lydorganer hos Fiske. 8vo. Kjöbenhavn, 1884. **Author.**

Spruce, R. On *Cephalozia* (a Genus of Hepaticæ); its Subgenera and some Allied Genera. 8vo. Malton, 1882. **Author.**

Steindachner, Dr. Beiträge zur Kenntniss der Fische Japans. Parts 1–3. 4to. Wien, 1883–84. **Author.**

Stone, Olivia M. Norway in June. 8vo. Lond., 1882. **Author.**

Studies in Microscopical Science. Vol. i. 8vo. Lond., 1883. **A. C. Cole.**

Tate, Prof. R. (1) Descriptions of some New Species of *Squilla* from South Australia. 8vo.—(2) Botany of Kangaroo Island. 8vo.—(3) List of Plants unrecorded for Southern Eyre Peninsula. 8vo. — (4) Additions to the Flora of South Australia. 8vo. Adelaide, 1883. (And other pamphlets.) **Author.**

The Garden. Vols. xxiv., xxv. 4to. Lond., 1883–84. **W. Robinson.**

The Gardener's Chronicle. Vols. xx., xxi. Fol. Lond., 1883–84. **Editor.**

The Veterinarian from 1828 to 1883 (48 vols.). 8vo. Lond. **Prof. T. S. Cobbold.**

Thomson, J. Development and Generic Relation of Corals of Carboniferous System of Scotland. 8vo. Glasg., 1883. **Sir J. Lubbock.**

Transactions of Cumberland Association. Pt. 6, 1880–81. 8vo. Carlisle, 1881. **J. G. Baker.**

Transactions of Edinburgh Naturalists' Field Club. Vol. i. pts. 1, 2. 8vo. Edinb., 1882–83. **Symington Grieve.**

Vasey, Dr. G. Agricultural Grasses of the United States. 8vo. Washington, 1884. **Author.**

Vidal y Soler, Don Sebastian. Sinopsis de Familias y Géneros de Plantas Leñosas de Filipinas. 8vo. Text. 4to. Atlas. Manila, 1883. **Author.**

Vukotinović, Ludovico de F. Formæ Quercuum Croaticarum in Ditione Zagrabiensi Provenientes. 8vo. Zagrebu, 1883. **B. Daydon Jackson.**

White, Rev. W. Farren. Ants and their ways. 8vo. Lond., 1883. **Author.**

Whitehead, C. Profitable Fruit-Farming. 8vo. Lond., 1884. **Author.**

Wille, N. (1) Om en ny endophytisk Alge; Algologiske Bidrag. 8vo. Christiania, 1880.—(2) Om Pollenkornenes hos Juncaceer og Cyperaceer. 8vo. Christiania, 1882. **Sir J. Lubbock.**

Winslow, Lieut. F. Catalogue of Economic Mollusca, Int. Fish. Exhib., Lond. 8vo. Washington, 1883. **G. Brown Goode.**

Zigno, Baron Achille de. Flora Fossilis Formationis Oolithicæ. Vol. i. Fol. Padova, 1856–68. **Author.**

Zoologist. 8vo. Lond., 1883. **T. P. Newman.**

Zopf, W. Die Spaltpilze. Breslau, 1883. **Sir J. Lubbock.**

# PROCEEDINGS

# OF THE

# LINNEAN SOCIETY OF LONDON.

## (SESSION 1884–85.)

November 6th, 1884.

Sir JOHN LUBBOCK, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

The following Letter was read from the Chair:—

"Royal Gardens, Kew, 24 Sept., 1884.

"Dear Sir,

"As Executor of the late G. Bentham, Esq., F.R.S., I have to inform you that he has left the sum of £1000, free of legacy duty, to the Linnean Society, which will be paid on the settlement of his affairs.

Yours faithfully,

*The Secretary Linnean Society.* JOS. D. HOOKER."

Mr. W. T. Thiselton Dyer exhibited and made remarks on the following plants and their products:—(1) *Vaccinium Arctostaphylos*, L., from which the Trebizonde Tea ("Thé-de-Bel-Dagh") is prepared at Amassia and Tokat. The Tea has a pleasant odour, but a somewhat harsh taste when drunk. (2) *Pueraria Thunbergiana*, Benth.: specimens of the plant and of the textile fabric (resembling coarse-woven linen) made from its fibres and obtained from Kew-Kiang and Chemulpo, Corea. (3) *Pachyrhyza sinensis*, with the native name of "Ko-poo:" a leguminous plant, from the fibres of which the yellow and more expensive kind of native summer cloth is made. This cloth, it is said, does not adhere to the skin during perspiration, and accordingly is more comfortable for wear. (4) Drawing of *Dendrobium Thalænossia*, Fitzg., from a plant collected by Mr. H. O. Forbes during his sojourn in the Tenimber Islands.

Mr. Thomas Christy showed a nut of *Kola acuminata*, which, when planted, had thrown up a spike of flowers instead of foliage, and it had been in bloom without any sign of leaves for eight months, the nut itself becoming of a bright green colour.

Mr. R. A. Rolfe afterwards exhibited some examples of British Oak-galls, produced by Cynipidean insects of the genus *Neuroterus*, and collected by him chiefly in Kew Gardens and at Mortlake. They were:—(1) The Silk-button Gall formed by *N. numismatis*, rare this season, though more usually abundant; he has found this on the common English Oak, *Quercus Robur*, and on *Q. lusitanica*, *Q. infectoria*, and *Q. Turneri*. (2) The Globose Gall, produced by *N. ostreus*, got from *Quercus Robur* and *Q. infectoria*, on the leaves of which trees it is confined to the midrib or principal veins. (3) The smooth Spangle Gall, of a greenish-white or rose-colour, flattish and destitute of hairs, produced by *Neuroterus fumipennis*, and got on *Q. Robur* and *Q. lusitanica*. (4) The pale yellowish-green scarce Spangle Gall produced by *N. læviusculus*, and only got by Mr. Rolfe on the common Oak. (5) The common Spangle Gall, produced by *N. lenticularis*, found not only on *Q. Robur*, but also on *Q. Tarnetto*, *Q. Toza*, *Q. lusitanica*, *Q. infectoria*, and *Q. dentata*; the last a Japanese Oak. There was also shown a remarkable blackish-purple common Gall, found on *Quercus Robur*, var. *Granbyana*. He stated that, as a rule, the plan and details of the Gall depended on the nature of the irritating fluid deposited by the insect; but, on the other hand, the different species of Oak seem to have an influence in determining certain variations as to colour, and, it may be, general growth of the Galls.

The following papers were read:—

1. "On some Points in the Development of the Five-bearded Rockling (*Motella mustela*)." By George Brook, F.L.S.

2. "On a Collection of Plants made in the Timor-laut Islands." By H. O. Forbes. (Communicated by W. T. Thiselton Dyer, C.M.G., F.L.S.)

3. "Notes on some New-Zealand Birds." By Thomas Potts, F.L.S.

4. "Remarks on the Reproduction of the Heterœcious Uredines." By Charles B. Plowright. (Communicated by W. T. Thiselton Dyer, C.M.G., F.L.S.)

## November 20th, 1884.

Prof. P. Martin Duncan, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Arthur Roope Hunt, Esq., was elected a Fellow.

Mr. F. M. Campbell exhibited a Dragon-fly, caught in September, on the left bank of the Dordogne, from a flight of Dragon-flies which were taking a south-easterly direction; numbers were observed passing continuously for an hour and a half. He also drew attention to the steady movement of the Humming-bird Hawk-Moth when placed on its back.

Mr. Francis B. Forbes drew attention to specimens of pods and seeds used by the Chinese in place of soap. He stated, that for ordinary detergent purposes an impure earthy soda and a lye made from ashes are employed. The leaves of *Hibiscus syriacus* and *Ginko biloba* are occasionally used for cleansing the head. The most favourite substance, however, is the fruit of certain Leguminosæ (Fei-tsao-tow). The late Daniel Hanbury figures these seeds as a species of *Dialium*. Dr. Porter Smith says they are the product of *Acacia concinna* (*Mimosa saponaria*, Roxb.). Dr. Breitschneider, on the contrary, asserts that they belong to *Gymnocladus chinensis*, originally described by Baillon from pods only. Some young leaves, flowers, and fruit from Foochow are at Kew, and have been figured in the 'Icones Plantarum;' those now shown are much finer examples, and from Ningpo and Wa-hu. The pods are roasted and kneaded into small balls, used for washing clothes and the head in bathing, but on account of their unpleasant smell are prohibited in the public baths in China. The pods of *Gleditschia sinensis*, Lamarck (Tsao-chio), are used for the same purposes as *Gymnocladus*, those exhibited being from Pekin and Shanghai district; one of them seems to answer to Dr. Hance's new *G. xylocarpa*. The Chinese break the pods into small bits, which are soaked in boiling water until an oily substance exudes, when they are ready for use. Bentham refers to a South-China tree as *G. sinensis*, Linn. Lamarck founded his species on a tree growing in the Jardin des Plantes, raised from seed sent by Père Incarville from Pekin 200 years ago. It is doubtful if the northern and southern plants are identical. Another saponaceous substance is derived from *Sapindus Makwinsi* (*S. chinensis* or *Kolreuteria paniculata*, Lam.), specimens of which from Ningpo were also exhibited.

Messrs. H. and J. Groves exhibited specimens of:—(1) *Chara connivens*, collected at Slapton, S. Devon, the only known British station, for no trace of the plant is now to be found at

Stokes Bay. (2) *Chara canescens* (=*C. crinita*), obtained from a pool between Helston and the Lizard, W. Cornwall, by Messrs. Guardia and Groves, and also at Little Sea, Studland, Dorset, by Mr. Mansell Pleydell.

Mr. George Murray showed dried and moistened examples of an Alga, *Glœocapsa*, found by Mr. Pryer in bird's-nest caves in North Borneo.

Mr. J. G. Baker read the following letter from Mr. W. Brockhurst, of Didsbury, dated November 17, 1884:—"On April 2 I had the pleasure of exhibiting to the Society a number of prepared specimens of the Daffodil, which appeared to prove that double Daffodil flowers might produce seeds; and I advanced some arguments, based upon the observations I had made, to show that they were spread over wide areas in a wild state by seeding. The specimens showed the seed-vessels filled with ovules; but this did not fully prove that ripe seeds capable of germination would be matured. I therefore carefully observed a number of flowers of double Daffodils (*Narcissus telamonius plenus*) and marked them as they went out of bloom, to prevent any mistakes. One of these produced a capsule containing nine shining black seeds, which were gathered June 24th, and at once sown in a pot and covered with a sheet of glass. Of these seeds four have already germinated, and show grass-like growths an inch above the soil. This therefore completes the proof; and if you think it will interest the Linnean Society, I shall be glad if you will communicate it on my behalf at the next meeting."

Mr. W. T. Thiselton Dyer showed and made some remarks on some sterile runners of *Mentha piperita*, on the remains of flowers of *Epilobium hirsutum*, both taken from a wreath found by Prof. Maspero in a tomb near Thebes, and supposed to be of the 20th or 26th dynasty. Mr. Dyer also exhibited fresh flowers of *Ipomœa purpureo-cærulea*.

Mr. Thomas Christy exhibited two specimens of *Lycaste Skinneri*, Lindl., one with two flowers on one stem, the other with an abortive lip, adherent for the greater part of its length to the column. He also drew attention to samples of the tea (probably a species of *Ilex*) used largely in Bogotá, but which is said to be deficient in flavour.

Mr. E. C. Stanford thereafter showed some of the products derived from Seaweed, viz.:—Algin, the insoluble form of which (Alginic acid) can be made into shirt-studs resembling horn;

2. "Notes on the Habits of Australian Hymenoptera." By H. L. Roth. (Communicated by Sir John Lubbock, Bart., Pres. L.S.)
3. "Singular Mode of Reproduction in *Athyrium Filix-fœmina*, var. *clarissima*. By Charles T. Druery. (Communicated by Dr. J. Murie, F.L.S.)

### December 4th, 1884.

**William Carruthers**, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

The Hon. F. Stanley Dobson, LL.D., William A. Haswell, Esq., M.A., George William Oldfield, Esq., M.A., Dr. George William Parker, Michael Cresse, Esq., M.A., Vet.-Surg. Thomas Jonathan Symonds, W. A. Talbot, Esq., and Joseph Henry Thompson, Esq., were elected Fellows.

Mr. W. T. Thiselton Dyer exhibited:—(1) Examples of leaves of *Sagittaria montevidensis*, under different modes of cultivation, the changes thus induced as regards size and general facies being most remarkable, so much so that they might be deemed widely separate genera. The small leaves were from a plant raised from seeds collected in Chili by Mr. John Ball, F.R.S., and sent to Kew in 1883, and grown in a pot half submerged in the *Nymphæa*-tank. The enormously large leaf and spike were those of a plant raised from seeds ripened at Kew and sown in spring 1884. When strong enough the plant was planted in a bed of muddy soil, kept saturated by means of a pipe running from the bed to the *Nymphæa*-tank. (2) A special and peculiar instrument called a "Ladanisterion," from Crete, it being a kind of double rake with leathern thongs instead of teeth, and used in the collecting of Gum Labdanum, a drug now dropped out of modern pharmacy. The instrument in question was procured for the Kew Museum by Mr. Sandwith, H.M. Consul in Crete. (3) A collection of Marine Algæ from West Australia, brought to this country by Lady Broome.

The following papers were read:—
1. "Relationship of Indian and African Freshwater Fish-Faunas." By Dr. Francis Day, F.L.S.
2. "On *Heterolepidotus grandis*, a Fossil Fish from the Lias." By James W. Davis, F.L.S.
3. "On the Growth of Trees and Protoplasmic Continuity." By Alfred Tyler, F.G.S. (Communicated by the Secretary.) This last communication was illustrated by diagrams and transparent photographs enlarged on the screen by the lantern and lime-light.

## December 18th, 1884.

Sir JOHN LUBBOCK, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Thomas Bates Blow, Esq., Henry George Greenish, Esq., Alfred G. Howard, Esq., Lieut.-Col. William Rowe Lewis, Lionel de Niceville, Esq., Charles Bagge Plowright, Esq., and Frederick Shrivell, Esq., were elected Fellows.

Mr. H. Ling Roth showed some roots of the Sugar-Cane from Queensland, preserved in spirit; and stated that it appeared to him that the plant possesses two sorts, viz. ordinary fibrous roots, and others of a special kind, like taproots.

Mr. Edward Alfred Heath exhibited a stuffed adult specimen of a Wild Cat, which had been found dead in a trap (Nov. 1884) in Ben Armin Deer Forest, Sutherlandshire, in which district they are still frequently met with.

Mr. W. H. Beeby called attention to examples of Bur-reeds (*Sparganium*), obtained by him at Albury ponds, near Guildford, in Oct. 1883, and since then elsewhere in Surrey. The plant is quite distinct from *S. ramosum* and *S. simplex*, and may be regarded as a new British species, for which he proposed the name of *S. neglectum*.

Mr. Thomas E. Gunn showed an interesting series in varied plumage of the (hitherto rare in Britain) Blue-throated Warbler, *Ruticilla suecica*, L. The examples in question were procured by Mr. G. E. Power, at Eley, on the Norfolk coast, in Sept. last. Mr. Gunn also exhibited an immature female specimen of the Little Bittern (*Bataurus minutus*), shot by Mr. E. N. Benningfield, at Broxbourne Bridge, Herts, on 15th Oct. Lastly, Mr. Gunn exhibited a hybrid between a cock Goldfinch and a hen Bullfinch, which possessed the marked characteristics of both parents.

There was exhibited, for Mr. R. Morton Middleton, examples of varieties of Indian Corn (*Zea Mays*, L.) from the United States, Natal, and the borders of the river Danube. These markedly differed from each other in size, colour, form, and ornamentation.

Mr. W. T. Thiselton Dyer exhibited and made remarks on life-size photographs of cones of two species of *Encephalartus* from South Africa, viz. *E. longifolius* and *E. latifrons*, neither hitherto figured in European books. He also showed tubers of

The following papers were read:—

1. "On Contrivances for ensuring Self-fertilization in some Tropical Orchids." By Henry O. Forbes. (Communicated by H. N. Ridley, F.L.S.)
2. "Notes on the Cerebral Convolutions of the Carnivora." By Prof. St. G. Mivart. F.L.S.
3. "On Apospory in Ferns." By F. O. Bower, F.L.S.
4. "Aerial and Submerged Leaves of *Ranunculus Lingua.*" By F. C. S. Roper, F.L.S.

## January 15th, 1885.

Sir John Lubbock, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Stuart Carey, Esq., John Emmet, Esq., Henry George Stacey, Esq., and Sydney de Courcy Thompson, Esq., were elected Fellows.

James E. Bagnall, Esq., was elected an Associate.

Mr. E. Alfred Heath exhibited a common Martin from Inverness-shire, and a Stoat in its winter coat from Ross-shire.

There was exhibited for Mr. J. Murison a series of dried specimens of Cape Grasses and Rushes, and a cone and leaf of *Leucadendron gentium*; also some rare New-Zealand Grasses.

Dr. J. Murie called attention to specimens of Himalayan Edelweiss transmitted to this country by Capt. Emil Boss, which, through the courtesy of Mr. Douglas Freshfield, F.R.G.S., were for inspection on the table. The localities given are as follows:—(1) Dunassorigde, July 1883, above 7000 feet; (2) head of Orlatang valley, foot of Kabu, 15,000–15,500 feet, August 1883; (3) Independent Sikkim, August 1883, 16,500–17,000 feet above sea-level.

Mr. McLachlan exhibited a book of beautifully executed chromo-lithographic figures of Japanese fishes, produced at the government printing-press at Tokio. He remarked that the use of Latin names is allowed, but all English names, or explanations in any foreign language are forbidden.

Mr. Thomas Christy exhibited a specimen of Mangabevia Rubber from *Hancornia speciosa*, which is considered superior to the finest Pará Rubber obtained from the *Hevea brasiliensis*. It is a very important tree to introduce into Australia, as it grows on sandy plains, and the fruit is very delicious, much resembling a large plum. If carefully tapped once a month, the tree seems not to suffer.

The following papers were read:—

1. "Plants collected by Mr. Joseph Thomson in the Mountains of East Equatorial Africa." By Sir Joseph D. Hooker and Prof. Oliver, F.L.S.

2. "Botanical Notes from Darjeeling to Tonglo and Sundukphoo." By C. B. Clarke, F.L.S.

3. "Further Contributions to the Flora of Madagascar." By J. G. Baker, F.L.S.

4. "The Orchids of Madagascar." By H. N. Ridley, F.L.S.

5. "Colydiidæ collected by Mr. Lewis in Japan." By Mr. David Sharp. (Communicated by George Lewis, F.L.S.)

6. "On some Colydiidæ from Ceylon." By Mr. David Sharp. (Communicated by George Lewis, F.L.S.)

7. "Ornithological Notes." By T. E. Gunn, F.L.S.

8. "On some North-Atlantic Species of *Cerithiopsis* dredged off Madeira." By the Rev. R. Boog Watson, F.L.S.

### February 5th, 1885.

**Frank Crisp**, LL.B., Vice-President and Treasurer, in the Chair.

The Minutes of the last Meeting were read and confirmed.

John Hodgkin, Esq., was elected a Fellow.

The following papers were read:—

1. "On the Family Arbaciadæ, Gray.—Part I. The Morphology of the Test in the Genera *Cœlopleurus* and *Arbacia*." By Prof. P. Martin Duncan, Vice-Pres. L.S., and W. Percy Sladen, F.L.S.

2. "Burmese Desmidieæ, with Descriptions of New Species occurring in the neighbourhood of Rangoon." By W. Joshua, F.L.S.

3. "On the Employment of the Names proposed for Genera of Orthoptera previously to 1840." By W. F. Kirby. (Communicated by A. G. Butler, F.L.S.)

### February 19th, 1885.

Prof. P. **Martin Duncan**, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

The Rev. L. Martial Klein was elected a Fellow.

Mr. W. T. Thiselton Dyer exhibited and made remarks on specimens of peculiar Chinese "Square Bamboo" (*Bambusa*

Mr. Thomas Christy afterwards called attention to examples of silk received from Auckland, New Zealand.

The following papers were read:—

1. "Recent Ephemeridæ or Mayflies.—Part III." By the Rev. A. E. Eaton. (Communicated by the President.)

2. "European and North-American Species of Mosses of the Genus *Fissidens*." By W. Mitten, A.L.S.

3. "Anatomy of the Ambulacra of the Recent Diadematidæ." By Prof. P. Martin Duncan, F.L.S.

### March 5th, 1885.

Sir JOHN LUBBOCK, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

James Epps, Esq., James Groves, Esq., and William Ransom, Esq., were elected Fellows.

Mr. E. M. Holmes exhibited and made remarks on new British Marine Algæ, viz.:—*Castagnea contorta*, *Ceramium divaricatum*, *Chantransia luxurians*, *Cladophora prolifera*, *Ectocarpus insignis*, *E. reptans*, *Grateloupia dichotoma*, *Polysiphonia ceramicæformis*, *P. rhunensis*, *Calothrix parasitica*, *Vaucheria piloboloides*, from the south coast of England; and *Porphyra seucosticta*, *Calothrix crustacea*, *Cladophora arctiuscula*, *Codiolum longipes*, *Phyllitis fascia*, and *Sphacelaria cæspitula*, from Berwick on Tweed and Fifeshire. Mr. Holmes also called attention to specimens of the leaves of *Eucalyptus Staigeriana*, which are remarkable for their fragrant odour, resembling that of *Verbena*, due to a volatile oil, which is stated by Mr. Bailey, the Government botanist at Brisbane, to be likely to form an article of commerce in the future.

There likewise was shown by Mr. Holmes a set of plant-labels made from the leaves of the Talifat Palm.

Mr. William Brockbank exhibited specimens of *Leucojum carpathicum*, a variety of *L. vernum*, differing from the type by having the flowers tipped with yellow instead of green. This species of *Leucojum* is said now to be seldom met with in English gardens.

Mr. C. B. Plowright exhibited and made remarks on examples of a *Ranunculus* infected with spores of *Urocystis pompholgodes*.

Mr. E. Wethered exhibited some microscopic sections of the "Better Bed" coal-seam of Yorkshire, and of the "Splint" coal from Whitehill Colliery, near Edinburgh. He mentioned that Prof. Huxley had drawn attention to the former as containing an unusual quantity of sporangia and spores of plants allied to the recent Club-Mosses. Mr. Wethered averred that the spores were only found in numbers in the topmost 3 inches of the coal-bed, but very sparsely in the lower portion of the seam. In the Edinburgh Splint Coal only 4 inches of the basal and but a small part of the upper layer contained spores. Macrospores and microspores, however, were present in both the coals; and, judging from these, he regarded them as belonging to plants resembling or allied to the recent forms *Selaginella* or *Isoëtes*.

The following papers were read:—

1. "On the Breeding of Salmon from Parents which have never descended to the Sea." By Dr. F. Day, F.L.S.
2. "On recently discovered Flowering Plants from the Interior of New Zealand (North Island), 1883–84." By the Rev. W. Colenso, F.L.S.

### March 19th, 1885.

Sir JOHN LUBBOCK, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Dr. John Grieve and Charles Thomas Druery, Esq., were elected Fellows.

Dr. G. J. Romanes exhibited two human crania from South Africa. One was that of an aboriginal Bushman from Kruis River, Cango district, Gudsthoorn, obtained through Dr. Stroud.

Mr. J. G. Baker exhibited a dried specimen of a supposed hybrid between the two genera *Aloë* and *Gasteria*, which had been grown in the Glasgow Botanic Gardens. He also showed and made remarks on a curious new Fern, *Polypodium* (§ *Niphobolus*) *polydactylon*, Hance, discovered by Mr. William Hancock, F.L.S., in the island of Formosa.

The following papers were read:—

1. "Diagnoses of new Genera and Species of Hydroids from the Collection of Miss Gatty." By Prof. Allmann, F.L.S.
2. "List of Plants noticed on Moresby, Basilisk, O'Neill, and Margaret Islands, South-eastern New Guinea." By Capt. William E. Armit, F.L.S.

### April 2nd, 1885.

Sir JOHN LUBBOCK, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Charles Hastings Dent, Esq., Thomas Gulliver, Esq., and Peter Macowan, Esq., B.A., were elected Fellows.

There was exhibited for the Duchess of St. Albans a series of coloured drawings of flowers, fruits, and insects of the Bahamas. These had been sketched and painted from nature by Mrs. Blake, the wife of the Governor, and were intended as a preliminary towards elucidating the Natural History of the islands.

Mr. E. Morell Holmes exhibited specimens of the male and female plants of the Mistletoe (*Viscum album*), and pointed out the existence of stipules which appear not to have been noticed by previous observers. He also showed specimens of *Lathræa Squamaria* with four instead of two rows of flowers.

Mr. Thomas Christy drew attention to some Japanese drawings of plants, including the Square Bamboos exhibited at the evening Meeting, 19th February.

The following papers were read:—

1. "On the Coast Flora of Japygia, South Italy." By Henry Groves, F.L.S.

2. "Observations on the Continuity of Protoplasm." By Spencer Le Marchant Moore, F.L.S.

3. "On Rosanoff's Crystals in the Endosperm-Cells of *Manihot Glaziovii*, Müll. Arg." By Spencer Le Marchant Moore, F.L.S.

## April 16th, 1885.

Sir John Lubbock, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Cuthbert Robert Blackett, Esq., Frank Richard Cheshire, Esq., Charles French, Esq., and George Luehmann, Esq., were elected Fellows.

The President announced that the following Auditors for the examination of the Treasurer's Accounts had been nominated by the Council:—

For the Fellows, Mr. Charles J. Breese and Mr. J. Jenner Weir; for the Council, Mr. Thomas Christy and Mr. W. P. Sladen; and, by a show of hands, these were unanimously elected.

Dr. R. C. A. Prior exhibited a specimen in flower of *Gagea lutea*, Ker, obtained by Mr. Thomas B. Flower, F.L.S., in the woods near Bath, Somerset.

Mr. W. T. Thiselton Dyer exhibited specimens illustrating the polymorphism of foliage in the same species of flowering plants. He also showed collections of drift fruits and seeds from the mouth of the Ambernoh River, New Guinea, collected by Prof. Moseley in the 'Challenger' Expedition, and from the Solomon Islands.

Mr. Charles T. Druery, in support of the aposporous reproduction of Ferns, exhibited pinnæ of *Athyrium Filix-fœmina*, var. *clarissima*, showing prothalli still adherent, which were produced not from spores, but from the stalks of aborted sporangia. Some of the prothalli had developed archegonia in about equal numbers on both upper and under surfaces.

Mr. Thomas Christy exhibited Kola-nuts and a block of Kola paste not unlike cocoa, but said to be five times stronger. It is reported that a cup of Kola chocolate enables a man to work a whole day without feeling fatigue.

Specimens were shown under the microscope of parasitic growth within recent Coral (*Lophelia prolifera*), for Prof. P. Martin Duncan; and of *Batrachospermum*, organ of Bojanus of the *Anodon*, &c., for Mr. Arthur C. Cole.

The following papers were read:—

1. "On Forms of Leaves." By Sir John Lubbock, Bart., Pres. L.S.

2. "Description of a new Species of Minyad from Australia." By Prof. F. Jeffrey Bell. (Communicated by Dr. A. Günther, F.R.S., F.L.S.)

## May 7th, 1885.

Sir JOHN LUBBOCK, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

James Backhouse, Esq.. Frederick Huth Meinertzhagen, Esq., and Arnold Andrew Reischeck, Esq., were elected Fellows.

Prof. Julius Victor Carus, Leipzig, Prof. Robert Caspary, Königsberg, and Prof. Philippe van Tieghem, Paris, were elected Foreign Members.

Mr. W. T. Thiselton Dyer exhibited and made remarks on a series of utensils used by the natives of Pará for collecting &c. the rubber from the trees. Among the apparatus were:—Clay bowls for fixing to the trunks of the trees; "Cuia" or calabash for ladling the milk from the large clay bowl and coating by a thin layer the paddle or other mould; gourd for receiving the fluid rubber; axe for tapping the trees; and stove over which the rubber is smoked.

Mr. Dyer also drew attention to the flowers and foliage of species of Rhododendron grown at Kew from the original Hima-

Stuffed specimens of the Hen-Harrier, Common Buzzard, Peregrine Falcon, ♂ and ♀, and an old Raven were shown for Mr. Alfred Heath.

A fine collection of Palæolithic instruments from the Thames valley was exhibited by Mr. John Evans.

The following papers were read:—

1. "On the Germination of Seeds after prolonged Immersion in Salt Water." By James Walter White, Esq. (Communicated by Dr. R. C. A. Prior, F.L.S.) (See Appendix.)

2. "On Eocene Ferns from the Basalts of Ireland and Scotland." By J. Starkie Gardner, F.L.S.

## May 26th, 1885.

### *Anniversary Meeting.*

At 3 P.M., the time appointed by the Charter, only three Members being in attendance, with no probability of a quorum, the proceedings were closed, the Meeting not having been duly constituted.

By previous announcement, the Anniversary Meeting was fixed for the 11th June next at 8 P.M.*

## June 4th, 1885.

FRANK CRISP, LL.B., Treasurer and Vice-President, in the Chair.

The Minutes of the Meeting of 7th May and the Report on the *pro-forma* Meeting of 25th May were read and confirmed.

The postponement of the Anniversary Meeting till Thursday, 11th June, at 8 P.M., was again announced from the Chair.

Dr. John R. Henderson was elected a Fellow.

Robert Allen Rolfe, Esq., and Henry O. Forbes, Esq., were elected Associates.

Dr. R. C. A. Prior exhibited a branch of a Silver Fir, *Abies pectinata*, with an abnormal development, composed of an aggregation of long, nearly barren shoots. This specimen was obtained from the woods at Rogate Lodge, near Petersfield, Hants. He also called attention to an example of *Euphorbia Cyparissias*, which was found growing in an apparently wild state near Petersfield.

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* The Anniversary Meeting has fallen on Whitsunday four times during the existence of the Society, namely 1795, 1801, 1863, and 1874. It will also fall on a Sunday in 1896, 1931, and 1942. On no previous occasion has the Anniversary Meeting been postponed on account of the 25th May being Whitmonday.

Dr. Francis Day exhibited a series of shells of Pearl Oysters, pointing out that the *Avicula margaritifera* is not the form from which the pearls of Ceylon and Northern India are obtained, the latter being got from the smaller and more convex *A. fucata*. Also that the little *A. vexillum* has been mistaken for the spat of the Ceylon Pearl Oyster by the various Inspectors of the Pearl Fisheries, except Captain Phipps of Tuticorin, and Mr. H. S. Thomas, F.L.S., who has lately inspected the banks and obtained specimens. The *A. vexillum* rarely exceeds one third of an inch in length, is convex, perfectly smooth externally, and somewhat of the shape represented by Reeve's figure (Conchol. Icon.); whereas the *A. fucata*, even when $\frac{1}{12}$ of an inch in length, is covered with spines. The existence of numerous deposits of *A. vexillum*, on the Ceylon and Madras pearl-banks, has unfortunately given rise to error; and the anticipation of obtaining a crop of Pearl Oysters within the next three seasons is therefore likely to prove a disappointment.—Dr. Day also exhibited a specimen of a Trout three months old which had two heads. He further mentioned that the hybrids between the female Lochleven Trout and the male Salmon, which were hatched in 1881 at Howietoun, have lately shown symptoms of spawning; and on a female being opened, it was found to contain somewhat large ova, showing that they may be expected to breed this winter.

A characteristic series, from young to old stages, of the true Pearl Oyster (*A. fucata*) of Ceylon, and of the small *A. vexillum*, were also shown on behalf of Mr. Edmund W. H. Holdsworth.

Mr. James Groves showed dried specimens of *Nitella capitata* collected in Cambridgeshire, an addition to the British Flora.

Mr. Frank R. Cheshire drew attention to a microscopic preparation demonstrating the peculiar disposition of the secretory gland in the head of the Bee (worker).

Specimens of three kinds of *Leucojum* were exhibited for Mr. William Brockbank, and the following note thereon was read:—"*Leucojum Hernandezii* was, I believe, first described by Cambessides in 1827, and was named after its discoverer, Dr. Hernandez. When Dean Herbert wrote his 'Amaryllidaceæ' (published in 1837), he had the plant before him, and described it as the third of Summer Snowflakes, the other two being *L. æstivum* and *L. pulchellum*; but he states that he had never seen *pulchellum*, which he describes from Salisbury's plate in 'Paradisus,' pl. 74. Salisbury appears to have first described *L. pulchellum* in 1807. These three Leucojums have thus appeared in our botanical lists till now; but the identity of *L. Hernandezii* has been completely lost, whereas *L. pulchellum* has become a common plant. *L. Hernandezii* does not appear to have been figured; and it is not to be found in the Herbarium at Kew.

"As it appeared desirable to clear up this matter, I applied to Mr. Baker for the name of some Spanish botanist who could obtain fresh bulbs of it; and by his advice I wrote last year to Señor M. Juan Rodriguez, of Mahon, Minorca, who very kindly had search made for the plant in the mountains, and who sent me twenty bulbs of the true plant, the *L. Hernandezii* of Cambressides. Several of these plants have bloomed, and they appear to be exactly the same as the *L. pulchellum* of Salisbury, as will be seen from the examples now produced."

The Rev. G. Henslow showed an example of Pistillody in the Tulip.

The Vice-President, from the Chair, announced a Meeting of the International Congress of Botany and Horticulture to be held at Antwerp from the 1st to the 10th August (next), 1885.

The following papers were read:—

1. "On Vernation and the Development of Foliage from Buds." By the Rev. George Henslow, F.L.S.
2. "Supplementary Notes on the Restiaceæ." By Dr. Maxwell Masters, F.L.S.
3. "On the Occurrence of *Lycopodites* (*Sigillaria*) *Vanuxemi*, Göppert, in Britain, with remarks on its Affinities." By Robert Kidston, F.G.S. (Communicated by Dr. Murie, F.L.S.)

## June 11th, 1885.

### *Anniversary Meeting.*

Sir JOHN LUBBOCK, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Mr. J. Jenner Weir, on behalf of the Auditors, presented the Annual Statement of Accounts as follows (p. 81):—

The Treasurer, Mr. Frank Crisp, then gave an account of Mr. Bentham's Legacy, and the legal causes which permitted only £500 to be received by the Society in lieu of the full sum of £1000 as willed by the Testator.

The Secretary then read his Report of the deaths, withdrawals, and elections of New Fellows for the past year as follows:—

Since the last Anniversary Meeting 14 Fellows had died, or their deaths been ascertained, viz.:—

### Fellows (14).

George Bentham.
James Buckman.
Lieut.-Col. George Ernest Bulger.
Isaac Anderson Henry.
Dr. John Gwyn Jeffreys.
James Henry Mangles.
John Rigden Mummery.
Dr. John Daniel Vittoria Blackman.
Major Frederick John Sidney Parry.
William Henry Rudston Read.
James Robertson.
Joseph Sidebotham.
The Rev. Frederick Silver.
George Brettingham Sowerby.

### Foreign Members (3).

Dr. Heinrich Robert Göppert.
Dr. Edward Rüppell.
Prof. Carl Theodor Ernst von Siebold.

### Associates (2).

William Laughrin.
Joseph Robson.

During the past official year 4 Fellows had withdrawn, viz.:—

Ferdinand Cole.
Dr. John Colebrook.
Dr. George Harrison.
William John Joshua Scofield.

And 43 Fellows, 3 Foreign Members, and 3 Associates had been elected.

During the past year there had been received as Donations from private individuals to the Library 47 volumes and 252 pamphlets and separate impressions of Memoirs. From the various Universities, Academies, and Scientific Societies there had also been received in exchange and otherwise 145 volumes and 281 detached parts; besides 40 volumes obtained by exchange and donation from the editors and proprietors of independent periodicals. The Council, at the recommendation of the Library Committee, had sanctioned the purchase of 80 volumes and 81 parts of important works. The total additions to the Library were therefore 312 volumes and 614 separate parts.

The following are the numbers of Books bound during the last year:—In half morocco 126, in full cloth 500, in boards or half-cloth 151, in roan 4, rebacked 78, relabelled 29=Total 888. Of Linnæus's own Library there have been 351 volumes variously repaired; all after the old style, so as to retain their original appearance as much as possible.

Professor Allman, in the name of some of the Fellows, presented to the Society a subscription portrait in oil of Mr. George Busk, who had held the office of Zoological Secretary for nearly

*Receipts and Payments of the Linnean Society, from May 1st, 1884, to April 30th, 1885. Presented at the adjourned Anniversary Meeting, Thursday, June 11th, 1885.*

| *Receipts.* | | £ | *s.* | *d.* |
|---|---|---|---|---|
| Balance at Bankers' on 1st May, 1884 | | 323 | 10 | 9 |
| Interest on Investments | | 171 | 7 | 9 |
| Admission Fees | | 222 | 0 | 0 |
| Annual Contributions | | 1158 | 2 | 6 |
| Compositions | | 135 | 0 | 0 |
| Sales of Publications:— | | | | |
| Transactions | £146 13 8 | | | |
| Journals | 77 12 8 | | | |
| Proceedings and Catalogues | 1 1 6 | | | |
| | | 225 | 7 | 10 |
| Donations | | 500 | 0 | 0 |
| | | £2735 | 8 | 10 |

| *Payments.* | | £ | *s.* | *d.* |
|---|---|---|---|---|
| Taxes and Insurance | | 20 | 8 | 3 |
| Repairs and Furniture | | 42 | 2 | 4 |
| Coals and Gas | | 68 | 8 | 9 |
| Salaries and Commission | | 380 | 8 | 6 |
| Library:— | | | | |
| Books | £169 8 4 | | | |
| Binding | 109 2 5 | | | |
| | | 278 | 10 | 9 |
| Expenses of Publications:— | | | | |
| Printing | £550 10 4 | | | |
| Illustrations | 386 11 9 | | | |
| Distribution | 50 6 5 | | | |
| | | 987 | 8 | 6 |
| Miscellaneous Printing and Stationery | | 38 | 9 | 11 |
| Petty expenses (including Tea and Postage) | | 57 | 0 | 3 |
| Investment of Compositions | | 70 | 0 | 0 |
| Balance at Bankers' on 30th April, 1885 | | 792 | 11 | 7 |
| | | £2735 | 8 | 10 |

FRANK CRISP, *Treasurer.*

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The foregoing accounts have been examined and found correct.

May 15, 1885.

J. JENNER WEIR, THOMAS CHRISTY,
CHARLES J. BREESE, W. PERCY SLADEN, } *Auditors.*

10 years, and whose labours for the welfare of the Society had been thoroughly appreciated. The portrait was executed by his daughter, Miss E. M. Busk.

Professor Duncan, on behalf of Mrs. Robert Brown (wife of our Fellow), presented a cast of the Bust of Linnæus, executed by a Swedish artist.

The President also called attention to the gift of a portrait in chalk of the Society's late Secretary and Treasurer, Mr. Frederick Currey, which had been presented to the Society by his son (Mr. Innes Currey) and others of the family.

On the motion of the President, a unanimous vote of thanks was accorded to the several donors.

The Secretary having read the Bye-Laws governing the elections—

The President then opened the business of the day, and the Fellows present proceeded to ballot for the Council and Officers.

The Ballot for the Council having closed, the President appointed Dr. Spencer T. Cobbold, Dr. Francis Day, and Mr. John Hopkinson, Scrutineers. The votes having been counted and reported to the President, he declared the following Members to be removed from the Council, viz.:—Professor Baley Balfour, Professor P. M. Duncan, Col. Godwin-Austen, Mr. Edward M. Holmes, and Mr. Henry T. Stainton.

And the following to be elected into the Council, viz.:—Professor W. H. Flower, Mr. Francis B. Forbes, Prof. H. N. Moseley, Mr. Dukinfield H. Scott, and Lord Walsingham.

The Ballot for the Officers having closed, the President nominated the same Scrutineers. The votes having been counted and reported to the President, he declared the result as follows, viz.:—

*President*, Sir John Lubbock, Bart., M.P.; *Treasurer*, Mr. Frank Crisp; *Secretaries*, Mr. B. Daydon Jackson and Mr. W. Percy Sladen.

The President then delivered his Address (see p. 84).

Prof. W. C. McIntosh then moved the following Resolution, viz.:—"That the thanks of the Society be given to the President for his excellent address, and that he be requested to allow it to be printed." This, having been seconded by Mr. G. S. Boulger, was carried unanimously.

Mr. Boulger then proposed that a special vote of thanks be

Mr. J. Hopkinson also proposed a vote of thanks to Dr. Murie for his services in the Library, &c. The President having seconded the motion, it was carried.

The Senior Secretary read the Obituary notices of deceased Fellows (see p. 90).

## June 18th, 1885.

William Carruthers, F.R.S., Vice-President in the Chair.

The Minutes of the Anniversary Meeting (11th June) were read and confirmed.

William Powell James, Esq., Prof. Richard John Anderson, Alfred Gibbs Bourne, Esq., James Brebner, Esq., Henry Deane, Esq., Hugh Neville Dixon, Esq., E. Haviland, Esq., and Dr. William Schlich, were elected Fellows.

The Chairman announced that the President had nominated Mr. William Carruthers, Mr. Frank Crisp, Mr. W. T. Thiselton Dyer, and Prof. William H. Flower to be Vice-Presidents for the ensuing year.

There were exhibited for Dr. Gorham specimens and sketches illustrating the venation of the Myrtaceæ as a type of the venation in *Pimpinella Saxifraga* and *P. magna*, Umbelliferæ.

There was also shown for Mr. L. A. T. Roberti some dimorphic twigs from the same Beech Tree, and flowers yellow and lilac from *Cytisus Adami*.

Prof. P. Martin Duncan showed specimens under the microscope, and demonstrated on the blackboard the supposed branchial structures found on the Tag of *Cœlopleurus Maillardi*.

Mr. Frank R. Cheshire drew attention to some curious specimens of albinism in males of *Apis mellifica*. In certain cases the cornea was perfectly faceted, but no pigment existed between the rods. The stemmata also were perfectly colourless. In other instances the cornea of the compound eyes was not faceted and pigment existed in small quantities, irregularly distributed. He believed this imperfect development was due to defect in the Worker Bee. Micro-organisms were frequently found growing amongst the spermatozoa stored in the receptaculum seminis, and he had traced as results thereof a liability to hermaphroditism.

Mr. Arthur Bennett exhibited four species of flowering plants new to Britain, viz.:—(1) *Schœnus ferrugineus*, L., found July 1884 by Mr. Brebner in the neighbourhood of Loch Tummel, Perthshire, a species whose continental distribution is quite in favour of its so occurring. (2) *Potamogeton fluitans*, Roth, found by Mr. A. Fryer, of Chatteris, in the county of Huntingdon, in the summer of 1884; several times reported as British, but always contradicted; the specimen now shown is undoubtedly the plant in question. (3) *Carex trinervis*, Degland, coast of Norfolk, gathered by Mr. Glasspoole about 1869–70, but unnoticed among his duplicates till 1884; a West-European plant confined to sandy sea-shores. (4) *Carex salina*, Wg., var. *Kattegatensis*, Fries (sp.), gathered by Mr. James Grant, of Wick, on the sandy bank of the Wick river in Caithness, in July and August 1883–84: an interesting addition, belonging to a section of Carices inhabitants of arctic and boreal lands.

The following papers were read:—

1. "On the Occurrence of Articulated Laticiferous Vessels in *Hevea*." By Dukinfield H. Scott, F.L.S.

2. "On *Golfingia MacIntoshii*, a new Sipunculid from the coast of Scotland." By Prof. E. Ray Lankester, F.L.S.

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## ANNIVERSARY ADDRESS OF THE PRESIDENT.

GENTLEMEN,—

We meet this evening at the close of a year which has been prosperous if uneventful.

Our meetings have been well attended, and of much interest. The exhibitions have been numerous, and once more our special thanks are due to the authorities at Kew for the many interesting specimens which they have kindly sent for our inspection. Indeed it has more than once occurred to me (though this does not at all apply to the Kew exhibitions) that it is becoming necessary to consider whether the description of and discussion on specimens exhibited will not have to be somewhat limited as regards time. It has happened more than once that valuable papers have been postponed to a late hour, though I have not liked to interrupt, on account of the interesting character of the exhibitions themselves.

Foremost among those whose loss we have had to deplore during the past year has been our ex-President, Mr. Bentham, at the venerable age of 85. His death followed closely on the completion of the great work for which we are indebted to him and Sir Joseph Hooker. His other contributions to Botanical Science number over 100, and include many important works, especially those on the Flora of Australia and of Hong Kong. He was elected President of this Society in 1861, and occupied the Chair for 13 years.

The Society are aware that he had intended to leave us in his will a legacy of £1000, but owing to certain legal technicalities, into which it is unnecessary to enter, we have only received £500.

Since our last Meeting we have also lost another of the former officers of the Society, Dr. Gwyn Jeffreys, who was Treasurer from 1875 to 1879. Dr. Jeffreys's name will always be associated with those of Sir Wyville Thomson and Dr. Carpenter, as having most successfully investigated the depths of the ocean by means of the dredge. In Dr. Gwyn Jeffreys's case, as in that of Mr. Bentham, we cannot but feel that, deeply as we deplore their loss, we could not, considering their great age, hope to retain them much longer amongst us.

During the year we have had the misfortune of losing three Foreign Members. Edward Rüppell, the celebrated traveller, who added so greatly to our knowledge of Abyssinian Zoology, who was elected as long ago as 1831; Heinrich Göppert; and Von Siebold, who, though not so long a Fellow of ours as Rüppell, began his scientific work in the year 1828. Among his researches perhaps the most remarkable were those on Parthenogenesis, on Parasitic Worms, and on Freshwater Fish, and last, not least, his great work on the Comparative Anatomy of the Invertebrata.

During the past official year 4 Fellows have withdrawn; and 43 Fellows, 3 Foreign Members, and 3 Associates have been elected. During the past four years the Members have been as follows:—

| | Fellows Elected. | Foreign. Members. | Associates. |
|---|---|---|---|
| 1880 ............ | 37 | 1 | 1 |
| 1881 ............ | 40 | | |
| 1882 ............ | 54 | 2 | |
| 1883 ............ | 36 | 3 | 1 |
| 1884 ............ | 43 | 3 | 3 |

It is satisfactory therefore to see that the number of Fellows has for some years been steadily increasing. Indeed, although the increase in no one case has been very large, still, if we take a period of years, it becomes very considerable, more especially during the last decade, as is shown by the following Table:—

Numbers of Fellows of the Linnean Society of London during each 10 years, from 1854 to 1884.

| 1854. | 1864. | 1874. | 1884. |
|---|---|---|---|
| 441 | 459 | 521 | 761 |

During the past year there have been received, as Donations from private individuals to the Library, 47 volumes, 252 pamphlets and separate impressions of memoirs. From the various Universities, Academies, and Scientific Societies there had also been received in exchange, and otherwise, 145 volumes and 281 detached parts; besides 40 volumes obtained by exchange and donation from the editors and proprietors of independent periodicals. The Council, at the recommendation of the Library Committee, have sanctioned the purchase of 80 volumes and 81 parts of important works. The total additions to the Library are therefore 312 volumes and 614 separate parts. Among the donations to the Library, I may perhaps specially mention 16 volumes of the 'Challenger' Series (nearly half of which, I may add, are the work of Fellows of our own Society), and Retzius's magnificent volume on the Structure of the Ear.

The only special feature in the accounts is the sum of £500 left us by Mr. Bentham, to which I have already alluded. One half of the sum received for compositions has been invested, in accordance with the usual practice, and the balance at the end of the year shows an increase of £470.

The papers communicated to the Society during the past year have been fully up to the average. In Zoology, for instance, I may especially mention Mr. Eaton's important work on the Ephemeridæ; while the discoveries of Mr. Druery and Mr. Bower constituted a most interesting addition to our knowledge of the developmental history of Ferns.

Our gallery of portraits has this year again several interesting additions. First, there is an admirable likeness of Mr. Busk, who acted as our Zoological Secretary for ten years with such marked ability and great advantage to the Society. Many of us had long looked to him as a future President, and I am sure we all sincerely trust that his health and strength may ere long be sufficiently restored to enable him to take once more an active part amongst us. The portrait is, I think all will admit, an admirable likeness, and all the more interesting as being the work of his own daughter, with whom it has evidently been a labour of love.

The likeness of Mr. Currey, for which we are indebted to his son, will also be greatly appreciated by his many friends in the Society.

We also receive this evening a bust of Linnæus, which will be presented to us formally by Prof. Duncan, on behalf of the donors Dr. and Mrs. Robert Brown.

I must not anticipate the proceedings of to-morrow evening, yet I must congratulate Prof. Lankester on the progress of the Marine Biological Association, which is so greatly due to his energy. The object is to erect one or more Laboratories on the natural history of such fish, mollusca, and crustaceans as are of special economic importance. Tables for study and other resources are to be provided for British and other naturalists.

It is estimated that £10,000 at least will be required, of which £8000 has been subscribed, and it is to be hoped that the rest will soon be forthcoming. Several of the London Companies have subscribed; the Fishmongers leading with a handsome donation, and it is hoped that others also will contribute. The first Laboratory will be on the shore of Plymouth Sound, which is, no doubt, one of the best possible localities for such a purpose, and I may add that the Town Council have offered a suitable site free of cost, and a contribution of £1000.

"With regard to the building, the Council of the Marine Biological Association contemplate erecting a solid brick structure of about 100 × 40 feet ground area, and of two storeys. The exterior will be simple and unpretentious. The building will be placed close to the sea-shore so that the sea-water can be readily pumped into the Laboratory-tank, and in order that there may be easy communication with fishing-boats. It will also be desirable to have a floating barge anchored near the Laboratory, for special experiments on the breeding of fish, &c., and, in close proximity, it will be necessary to erect tanks on the foreshore, open to the tidal water, but arranged so as to prevent the escape of the animals confined in them for study."

Important results have been obtained in other countries, especially in Italy and the United States.

With Prof. Huxley as President, Mr. Crisp as Treasurer, Prof. Moseley as Chairman of Council, and Prof. Lankester as Hon. Sec., we may be sure that the Association will be conducted with energy, ability, and success.

At the recent meeting of the Geographical Society Lord Aberdare referred to Mr. Keltie's able report on the present state of instruction in Geography which is given at most of our great public schools, and commented on the manner in which this important subject is unfortunately neglected.

This is no doubt true, but it must also be said that, with the exception probably of arithmetic, geography, though so much neglected, is yet the branch of science to which most attention is paid. Geography is neglected no doubt, but other branches of science are almost ignored. Out of 40 hours of study per week, on an average less than 3 or 4 are given to all branches of science. Such at least was the melancholy state of affairs disclosed in the Parliamentary return published about five years ago. A similar return, which was ordered last year, will shortly be issued *, but I fear it will show little improvement, and that the neglect of science in our educational system remains still what it was described by the Duke of Devonshire's Commission, "little better

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* This report has since been issued, and fully bears out my worst forebodings.

than a national misfortune." How long this state of things will be tolerated it is difficult to say, but it is easy to foresee that we shall pay dearly for our short-sightedness in the long run. I believe I express the general feeling, almost the unanimous feeling, of scientific men, when I say that, while we do not undervalue or wish to exclude literature—to do so indeed would also be a fatal error—we cannot rest satisfied until Science receives its fair share of time in the educational system of the country.

It is a matter of congratulation that the House of Commons, with the cordial concurrence of the Government, has appointed a Committee to inquire into the state of Forestry in this country, and consider whether the establishment of a School of Forestry would not be advisable. I had previously visited the Forest School at Nancy, and at Whitsuntide I paid a visit to the Central Swiss School at Zurich. Prof. Schroter, who received me most kindly, was astonished to hear that we had no forest school whatever. He would hardly believe it. He asked where, then, did those who managed our woodlands receive their education? when and by whom were they examined? and whether under such circumstances our woodlands were not terribly mismanaged, which I was not in a position to deny. I trust that the result of our Committee may not only be to improve our National Forests, but also to render those in private lands more remunerative to their owners.

We all heard with great regret of the illness of our zoological secretary Mr. Romanes, and we were very pleased to see him again amongst us at the last meeting. His physicians, however, have ordered him abroad, and under the circumstances he has felt it necessary to resign his office. We shall all trust that his absence may be only temporary, and that we may often have the pleasure of seeing him at our evening meetings. We have been fortunate in inducing Mr. Percy Sladen, who has proved himself a very efficient councillor, to give us his services as Zoological Secretary.

Mr. Jackson also tendered his resignation; the loss to the Society would have been greatly aggravated if both its Secretaries had resigned at the same time; and he has very kindly consented to act for another year.

I have on previous occasions mentioned the progress made in the rearrangement of the Natural History Collections at the British Museum, which may now be said to be almost completed, and the rapidly increasing number of visitors shows how greatly they are appreciated. The arrangement of the collections in the Natural History Museum has steadily progressed. The Gallery devoted to the exhibition of the Cetaceans was opened to the public now several months ago. Five huge skeletons represent the largest species occurring in the British seas, whilst the animals. The arrangement of the Coral Gallery has also been completed, and the contents—which include, beside Corals, Polyzoa and Sponges—form by their nature, as well as by the appropriate mode of their exhibition, one of the most attractive parts of the collection. The Fish Gallery will be opened within a few weeks, awaiting only the completion of some table-cases for the exhibition of a typical series of skeletons.

Of Guides to the Exhibition Galleries, those of Mammalia and Reptilia have been issued. They have been prepared with the object of being of service not only to those who want an explanatory aid on a single visit to the Museum, but also to those, fewer in number, who desire, by closer study, to acquaint themselves with the general arrangement and the principal features of these classes of animals. That the Guides fulfil this object may be concluded from the fact that a second edition is already required of that of Mammalia.

The arrangement of the collections formed for the purposes of study has kept pace with the general progress, and three volumes of the zoological publications have been issued since the last anniversary of the Society. The first is the first volume of a 'Catalogue of Lizards,' by Mr. Boulenger, a work the want of which has been long felt, not only by the Herpetologist, but by all who have engaged in the examination of general biological questions. The second is a 'Report on the Zoological Collections made in the Indo-Pacific Ocean during the Voyage of H.M.S. 'Alert.'' This goodly-sized volume of 680 pages and 54 plates has been worked out by the members of the staff of the Zoological Department, and shows with how much zeal and ability Dr. Coppinger availed himself of his opportunities. The third Museum publication is the tenth volume of the 'Catalogue of Birds,' with the scope and value of which all workers in Ornithology are familiar. And in connection with this, mention should be made of the important and extensive additions which have been made to the collection of birds within the last twelve months. Two Fellows of our Society, who for many years have taken the keenest interest in the development of the National Collection, as they have done in the advancement of science, Messrs. Godman and Salvin, have transferred their magnificent collection of South and Central American birds to the Trustees of the British Museum. The arrival of the famed collection of Indian birds formed by A. Hume, Esq., C.B., may be expected in the present year, and will further contribute to render the National Collection unrivalled in this branch of study. I cannot enter into the details of the numerous additions recently made to the other branches of the collection (some 45,000 in number); but entomologists will be glad to hear that the better half of the types contained in the collection of *Lucanidæ*—to which Major Parry, a Fellow whose recent loss by death the Society has to deplore, had devoted the energy of a lifetime—has been secured for the National Collection, in spite of a very determined foreign competition for their possession.

Nor can I, in connection with the British Museum, omit to mention the interesting ceremony of last Tuesday, when the admirable statue of Darwin by Boehm was unveiled by Prof. Huxley, and accepted on behalf of the Trustees by the Prince of Wales. It is placed, most appropriately, in the Great Hall.

By the kind permission of the Council I had the pleasure of receiving the Fellows and other friends in these rooms in June last year, and I think those who were present will join with me in thanking the gentlemen to whom we were indebted for the interesting objects then exhibited.

It now, Gentlemen, only remains for me to express my gratitude to you for your support during the past year. To the Council, and particularly to the Officers, I would offer my very special thanks. No one can be more conscious of my shortcomings, especially in comparison with the services rendered to the Society by the eminent men who have preceded me in this chair; at the same time (and though, of course, the result is due to other causes) it is a great satisfaction to feel that, whether we consider the work done, the number of our Members, the state of our Library, or the condition of our Funds, we may fairly congratulate ourselves that the Society is in a vigorous condition, and I hope has still in the future a long career of usefulness and prosperity.

## OBITUARIES.

**GEORGE BENTHAM** was born at Stoke, a village near Plymouth, on September 22nd, 1800, the Coronation-day of George III., so that he was accustomed to say that when he was a boy a royal salute used to be fired on his birthday. He was the second son of General (afterwards Sir Samuel) Bentham, his mother being the eldest daughter of Dr. George Fordyce, F.R.S In 1805 General Bentham was sent by the English Government to St. Petersburg, where, and in Sweden, the family resided until 1807; here George acquired his knowledge of the Russian and Scandinavian languages.

War breaking out in 1807 between Russia and England, General Bentham was recalled, and on his return the family settled at Hampstead; the education of the younger members being continued under private tutors, the subject of our notice never attended a school of any kind. On the peace which followed the banishment of Napoleon Bonaparte to Elba, the Benthams removed to France, and took up their residence first at Tours, then at Saumur and Paris, their residence there being during the excited times of the Hundred Days. After this the family removed southward, travelling leisurely from one place to another in the southern provinces of France.

Whilst at Angoulême, Bentham's attention was first turned to Botany, by his mother possessing a copy of De Candolle's 'Flore Française,' and George, taking it up accidentally, was struck with the dichotomous tables for the determination of the plants, a plan which at once commended itself to his methodical mind. Gathering the first plant he saw, he tried to run it down by the aid of that book, and was long hindered by the articulation of the stamens of his subject, *Salvia pratensis*; but persevering, he succeeded in determining it, and his success induced him to prosecute the study.

At Montauban Bentham spent many months, afterwards looking back upon them as the happiest period of his life. He was entered as student of the Faculté de Théologie at Tours near by, and his time out of college was given up to drawing, botany, and music. As a proof of his bodily vigour at that time, he often boasted that when at that place he attended thirty-four balls between Twelfth-night and Shrove Tuesday, thirteen of which were consecutive, lasting from nine at night to the same hour the next day.

During the next few years his life was very varied in its occupations. He studied exotic plants, besides insects, and philosophy with John Stuart Mill, then a guest of his father for some months; he was his father's farm manager of an estate of 2000 acres, near Montpellier, his eldest brother having lost his life by an accident some years before. Under his close methodical application the farms and vineyards rapidly improved, and were very profitable; but he did not neglect his botany, for he found time for herborizations in the Pyrenees and the Cevennes, and spare hours were given to translating his uncle Jeremy Bentham's 'Chrestomathia' into French, which came out in 1823.

He visited England in 1823 to buy agricultural implements, and to inquire how further improvements might be effected in his Montpellier estate. But on his return he was hindered from doing all he wished by provincial jealousy, which led finally to the relinquishing of the estate in 1826, and the return of the family to England. Soon after his arrival in this country he took a tour through England and Scotland, taking letters of introduction to the leading botanists. In 1826 he was elected Fellow of the Linnean Society, and in the following year was proposed by Robert Brown for the Royal Society, but withdrew his candidature in common with several other scientific men, on the election of a President not in accordance with their views. In the same year he brought out his 'Catalogue des plantes indigènes des Pyrénées.'

Jeremy Bentham, his uncle, now opened up a new career to him, inviting him to devote some of his time in arranging MSS. for the press, assuring him that he would make provision for him on his death. This plan was only partially acceptable to George Bentham, who wished to embark on some profession which would render him independent of his relatives. After much consultation, it was arranged that he should enter Lincoln's Inn and read for the bar, whilst giving some hours each morning to his uncle's work, and again in the evening. This arrangement lasted until Jeremy's death in 1832, when George Bentham found himself master of a house in Queen-square Place, but, owing to various circumstances, with less property than was expected; but his father's death in the previous year made this of comparatively small importance. During these six years his life was one of incessant mental activity. Besides the work he accomplished for his uncle, he edited and partly rewrote his father's papers on naval administration.

In 1827 he published his 'Outlines of a new System of Logic,' with a criticism of Dr. Whateley's 'Elements,' in which the doctrine of the quantification of the predicate is for the first time set forth; only a few copies of this work were disposed of, when the publishers failed, and the stock was sold as waste paper. Probably it was owing to this that it was not until 1850 that Bentham's discovery was recognized, in the 'Athenæum' for December 21st; when a controversy arose as to his or Sir William Hamilton's claims to the discovery, which has been adjudicated in favour of Bentham.

In 1829 he undertook the Honorary Secretaryship of the Royal Horticultural Society, at a period when, by excessively wasteful expenditure, the Society was reduced to a very low ebb. Being a common friend of Joseph Sabine, the Hon. Sec., and Dr. John Lindley, the Assistant-Secretary, he took up the burden at their joint solicitation, and only laid it down in 1840, when the Society had been successfully navigated by himself into more prosperous times. It was during this space of time that so many of our most popular garden plants were introduced by the ill-fated Douglas, Hartweg, and other collectors, many of which plants were named and described by Bentham in the Society's publications. The Chiswick fêtes, too, were instituted whilst Bentham was Secretary, the first being held on April 3rd, 1832, 1700 people being present.

He attended the gathering of scientific men at Hamburg in 1830, greatly to his delight, as testified by his pleasant recollection of it after the lapse of half a century.

By the publication of his first important botanical work, 'Labiatarum Genera et Species,' 1832–36, he made his mark in the scientific world. The Order needed a monographer of Bentham's judicial and philosophical mind to classify its numerous species and genera scientifically.

Three years later, in 1835, he married the daughter of Sir Harford Brydges, Bart., of Boultibrooke, and the next year removed to his late uncle's house in Queen-square Place, where he resided till

1842, when he left London for Pontrilas House, Herefordshire. Here he continued to work unremittingly upon Botany, adding to his herbarium and library, as every naturalist must do if far removed from great centres of scientific industry; until 1854, when he found that his expenses were increasing beyond his means. He therefore determined to present his collections of plants and his botanical books to the Royal Gardens at Kew, and to return himself to London. Shortly after this he took up his quarters first in Victoria Street, and then at 25 Wilton Place, where he resided until his death.

Until the autumn of last year, Bentham pursued the same quiet method: leaving home a few minutes after nine, he drove to Vauxhall, proceeding thence by rail to Kew, where he worked from ten to nearly four in the afternoon, returning by the way he came. On his arrival at home he devoted an hour or more to writing out fairly his notes of work done during the day, and then dined. His meals were breakfast and dinner, separated, as we have seen, by a long interval, and he never broke his fast at other times, nor was he other than a spare eater.

This regular course of life was varied by a two months' holiday in the autumn of each year, spent in the country or abroad, and by devoting each Thursday to the affairs of the Linnean Society whilst its President, from 1861 to 1874.

On settling down to the methodical work at Kew which we have described above, he took in hand the 'Flora Hongkongensis,' the inauguration of the Colonial 'Floras' which have from time to time been issued under the auspices of the authorities at Kew. That finished, he undertook and completed the description of the plants of the most extensive local exotic flora ever completed, that of Australia, in which he derived great assistance from the plants and accompanying notes supplied by the Government Botanist of Victoria, Baron Ferd. von Mueller. The main work of his life, however, was done in conjunction with Dr. (now Sir Joseph) Hooker, being a revision, *after examination*, of the known genera of Phanerogams. Begun about 1858, the first part was issued in 1862, and the work was brought to a conclusion in 1883. Immediately after this his health visibly declined, and, after eighteen months of decreasing strength, he died at his house in Wilton Place on 20th September last.

In 1861 he was elected President of the Linnean Society in succession to Prof. Bell; and for thirteen years he devoted much time, not only to the duties of the Presidentship, which he performed with unremitting punctuality, but to the routine work of the Society, taking on his own shoulders much of the labour properly belonging to the other officers. His purse was constantly open for the purposes of the Society, and his series of Anniversary Addresses, which are unparalleled in the annals of the Society, were looked forward to by the body of Fellows as a most important factor in the day's proceedings. His last published paper came out in the Society's 'Journal,' detailing the respective amount of work contributed by Sir J. D. Hooker and himself to the 'Genera Plantarum;' and upon his death he was found to have bequeathed to it the sum of one thousand pounds, free of legacy duty, besides other scientific bequests.

A prominent feature of Mr. Bentham's character was a constitutional reserve, or rather shyness, often harassing to himself, which prevented many from appreciating his fine disposition and generous qualities. He was the most helpful of living botanists, sparing neither time nor trouble in aiding his brother workers with head and hand, pen and microscope. After Wallich's return to India he undertook the cataloguing and distribution of the last portion (numbers 7684 to 9148) of that celebrated botanist's gigantic herbarium, lithographing the tickets with his own hand. So, too, he catalogued, arranged, and distributed most of the plants collected by Robert and Richard Schomburgk in Guiana; also Hartweg's collections from Colombia, Mexico, and California; and, besides many lesser ones, those of his friend Richard Spruce, made at intervals during the whole period (about seven years) of that illustrious traveller's residence in Brazil and Peru, and amounting to not less than 50,000 specimens. These were all gratuitous services, undertaken solely in the interest of botanical science; and it is impossible to over-estimate their importance as contributions to our knowledge of the flora of the richest tropical regions of the globe. Nor did his kind offices end with these acts, for in more than one instance he undertook the collection of money due from subscribers, with the view of saving his collecting friends the expense and trouble of agency and commission.

A still greater task was the formation of the great general Herbarium now at Cambridge, which consists for the most part of that which his friend C. Leman bequeathed to Bentham. With this and duplicates from his own herbarium he classified, named, and had fastened down and enclosed in genus-covers no fewer than 30,000 species, forming a consulting herbarium superior to any in Britain except the national ones. This gigantic task took him ten years to complete. For this service he received the degree of LL.D. from the University of Cambridge.

The rebuilding of Burlington House, and the removal of the Linnean Society from its old quarters, now occupied by the Royal Academy, took place during Bentham's presidency. The plans for our apartments were modified from time to time, as the building progressed, at his suggestion; and when the removal took place he made all the arrangements for the transport of the books, specimens, and other property. The present scheme of classifying the books on the shelves was elaborated by him, and the volumes were put in their places with his own hands. The same office was fulfilled by him when the old herbarium building at Kew was adapted to modern needs; the library there was arranged largely according to his plans. The generation which was acquainted with his varied and powerful help has passed away, and one of the most modest of men failed to record it himself.

The honours which came to him were borne by him rather than coveted. Mention has already been made of the circumstances attending his degree of LL.D. at Cambridge; for the service done to colonial science by his 'Flora Australiensis' he was made C.M.G.; he also received one of the Royal Society's medals, and the Clarke Medal of the Royal Society of New South Wales; and was a correspondent of the Institute of France.

Dr. Kanitz published a bibliography in 'Magyar Növénytani Lapok,' which is given below with corrections and additions. Particular attention may be called to a series of most interesting letters addressed by him to Sir W. Hooker, containing information relative to the progress and condition of Botany in many foreign countries, published, wholly or in part, as "from an eminent botanist," in Sir William's various botanical journals [*]. These form, in a measure, a chapter of autobiography, and are especially interesting, as, for instance, when Bentham tells how he has settled down for a winter's work at Vienna, the result of which was his paper on Leguminosæ in the 'Ann. Wiener Museums' [†].

Mr. Bentham survived his wife, by whom he had no family, four years. The bulk of his estate passed to a great-niece, resident in France.

### List of Bentham's Works, etc.

1. Essai sur la nomenclature et la classification des principales branches d'art-et-science, ouvrage extrait [et traduit] du 'Chrestomathia' de J. Bentham par G. Bentham. Paris, 1823. 8vo.

2. Catalogue des plantes indigènes des Pyrénées et du Bas-Languedoc avec des notes et observations sur les espèces nouvelles ou peu connues; précédé d'une notice sur un voyage botanique fait dans les Pyrénées pendant l'été de 1825. Paris: Huzard. 1826. 8vo; pp. 128. (3 fr.)

3. *Anon.* Sketches of Manners in the South of France. I. The Rousillonais. Pp. 7. Lond. Magazine, Jan. 1827. II. The Republic of Anderoa. Pp. 7. Feb. 1827.

4. Outline of a new System of Logic, with a critical examination of Dr. Whateley's 'Elements of Logic.' 1827. 8vo; pp. 287.

5. Observations on the Registration Bill now pending before the House of Commons, addressed to the Commissioners on the Law of Real Property. 1831. 8vo; pp. 64; App. 65–163.

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[*] Hook. Comp. Bot. Mag. ii. 74–78, 187–191; Hook. Journ. Bot. ii. (1840) 103–118; Hook. Lond. Journ. Bot. v. (1846) 524–534, vi. 43–54.

[†] For other notices, see Nature, Oct. 2, 1884, pp. 539–543; Gard. Chron. Sept. 20, 1884, pp. 368–370; Magyar Növénytani Lapok, Sept., Oct., pp. 97–108.

6. De plantis in Expeditione speculatoria Romanzoffiana observatis: Labiatæ. Linnæa, vi. 1831, pp. 76–82.

7. Report on some of the more remarkable hardy ornamental Plants raised in the Society's Garden from seed received from Mr. D. Douglas. Hortic. Soc. Trans. i. 1831–35, pp. 403–414, 476–482; Ann. Sci. Nat. ii. (Bot.), 1834, pp. 80–89.

8. Labiatarum genera et species: or, a Description of the genera and species of Plants of the order Labiatæ; with their general history, characters, affinities, and geographical distribution. London: Ridgway. 1832–36. 8vo; pp. lxviii, 783, et mappa. (£1 16*s*.)

9. Account of Indian Labiatæ in the collection of J. F. Royle. Hooker, Botan. Miscell. iii. pp. 370–384; 1833.

10. Scrophularineæ Indicæ. A Synopsis of the East-Indian Scrophularineæ contained in the collections presented by the East-Indian Company to the Linnean Society of London, and in those of Mr. Royle and others; with some general observations on the affinities and subdivisions of the Order. London: J. Ridgway. 1835. 8vo; pp. 57.

11. Synopsis of the Gerardieæ, a tribe of Scrophulariaceæ. Hooker, Comp. Bot. Mag. i. 1835, pp. 198–212.

12. Synopsis of the Buchnereæ, a tribe of Scrophulariaceæ. Hooker, Comp. Bot. Mag. i. 1835, pp. 356–384.

13. Caractères des tribus et des genres de la famille des Scrophularinées. Ann. Sci. Nat. iv. (Bot.), 1835, pp. 178–188.

14. Note upon a newly-introduced half-hardy species of *Salvia* (*S. patens*). Hortic. Soc. Trans. ii. 1835–41, pp. 222–224.

15. Enumeration of the Plants collected by Mr. Schomburgk in British Guiana. Ann. Nat. Hist. ii. 1835, pp. 105–111, 441–451; iii. pp. 427–438.

16. Contributions towards a Flora of South America. Enumeration of Plants collected by Mr. Schomburgk in British Guiana. Hooker, Journ. Bot. ii. 1840, pp. 38–103, 127–146, 210–223, 286–324; iii. pp. 212–250; iv. pp. 99–130, 321–323; Hooker, Lond. Journ. Bot. i. 1842, pp. 193–203; ii. 1843, pp. 359–378; iv. 1845, pp. 622–637; v. pp. 351–365.

17. Labiatæ Orientales herbarii Montbretiani, seu Labiatarum species novæ vel minus cognitæ quas in Syria et Asia Minore collegerunt Gust. Coquebert-de-Montbret et Aucher-Eloy. Ann. Sci. Nat. vi. (Bot.), 1836, pp. 37–57.

18. *Anon*. Extracts from Letters to Sir W. J. Hooker, dated

20. Observations on some little-known genera and species of Scrophulariaceæ. Hooker, Comp. Bot. Mag. ii. 1836, pp. 53–60.

21. Herbarii Wildenoviani Didynamia gymnospermia cum monographia Benthamiana comparata. Linnæa, xi. 1837, pp. 327–348.

22. Review of the order Hydrophylleæ. [1834.] Linn. Soc. Trans. xvii. 1837, pp. 267–282.

23. Observations on the genus *Hosackia* and the American *Loti*. [1835.] Linn. Soc. Trans. xvii. 1837, pp. 363–368.

24. On the Eriogoneæ, a tribe of the order Polygonaceæ. [1835.] Linn. Soc. Trans. xvii. 1837, pp. 401–420.

25. Sileneæ, Leguminosæ, and Boragineæ, "also for describing in his own works, the Labiatæ and Scrophularineæ." Prof. Royle's 'Illustrations of the Botany of the Himalayan Mountains.' 1839.

M. De Candolle's 'Prodromus':—

26. Ericaceæ. Vol. vii. 1839, pp. 612–712.
27. Polemoniaceæ. Vol. ix. 1845, pp. 302–322.
28. Scrophulariaceæ. Vol. x. 1846, pp. 186–586.
29. Labiatæ. Vol. xii. 1848, pp. 27–603.
30. Stackhousiaceæ. Vol. xv. 1864, pp. 499–502.

31. Plantæ Hartwegianæ. Londini: Guil. Pamplin. 1839–57. 8vo; pp. iv, 393. (12*s*.)

32. *Anon*. France and Pyrenees (1839). Hooker, Journ. Bot. ii. (1840), pp. 103–118.

33. De Leguminosarum generibus commentationes. Wien. Ann. Mus. ii. 1840, pp. 61–142.

34. Observations on the distinctive characters of the Papilionaceæ and Cæsalpinieæ, suborders of Leguminosæ. Hooker, Journ. Bot. iii. 1841, pp. 125–133.

35. On the genus *Harpalyce*. Hooker, Journ. Bot. iii. 1841, pp. 208–211.

36. On the structure and affinities of *Arachis* and *Voandezia*. [1838.] Linn. Soc. Trans. xviii. 1841, pp. 155–162.

37. Observations on some genera of plants connected with the Flora of Guiana. [1838.] Linn. Soc. Trans. xviii. 1841, pp. 225–238.

38. On the *Heliamphora nutans*, a new Pitcher-plant from British Guiana. [1840.] Linn. Soc. Trans. xviii. 1841, pp. 429–434; Linn. Soc. Proc. i. 1849, p. 53.

39. Account of two new genera allied to Olacineæ. [1840.] Linn. Soc. Trans. xviii. 1841, pp. 671–686; Linn. Soc. Proc. i. 1849, pp. 85–85.

40. Notes on Mimoseæ, with a short synopsis of species. Hooker, Journ. Bot. iv. 1842, pp. 323–418; Hooker, Lond. Journ.

Bot. i. 1842, pp. 318–392, 494–528; iii. 1844, pp. 82–112, 195–226; iv. 1845, pp. 577–622; v. 1846, pp. 75–108.

41. Enumeration of the Plants collected in Hong Kong by Mr. Hinds. Hooker, Lond. Journ. Bot. i. 1842, pp. 482–494.

42. Enumeration of the Plants collected by R. B. Hinds and Mr. Barclay in the Feejee Islands, Tanna, New Ireland, and New Guinea; to which are added a few species gathered in Amboyna by Mr. Barclay. Hooker, Lond. Journ. Bot. ii. 1843, pp. 211–240.

43. Enumeration of Leguminosæ indigenous to Southern Asia and Central and Southern Africa. Hooker, Lond. Journ. Bot. ii. 1843, pp. 423–483, 559–613; iii. 1844, pp. 338–365; vii. 1848, pp. 580–657.

44. The Botany of the Voyage of H.M.S. 'Sulphur,' under the command of Captain Sir Edward Belcher, during the years 1836–42. Published under the authority of the Lords Commissioners of the Admiralty. Edited and superintended by Richard Brinsley Hinds, attached to the Expedition. The Botanical descriptions by George Bentham. London: Colburn. 1844. 4to; 195 pp., 60 tab. (£3 3*s*.)

45. Description of a new species of *Bolivaria*. Hooker, Lond Journ. Bot. v. 1846, pp. 190, 191.

46. *Anon*. Notes made during a Continental Tour in the summer and autumn of 1846–47, being extracted from letters addressed to the Editor by a botanical friend. Hook. Lond. Journ. Bot. v. 1846, pp. 524–534; vi. 1847, pp. 43–54, 477–482. Scandinavia, Russia, Turkey, and Italy.

47. *Anon*. Numerical List of Dried Plants in the herbarium of the Honourable East India Company, presented to the Linnean Society of London, continued from Dr. Wallich's List.—Euphorbiaceæ and other plants which, on the first sorting, were mixed with them, and have been roughly arranged in species for the purpose of distribution. Nos. 7684–8324, initials at end. 1847.

48. Contributions to the Flora of Guiana. Enumeration of Plants collected in British, Dutch, and French Guiana, by Robert and Richard Schomburgk, Dr. Hostmann, M. Leprieur, and others. Hooker, Lond. Journ. Bot. vii. 1848, pp. 567, 568.

49. Note on the genus *Benjaminia*, Mart. Hook. Lond. Journ. Bot. vii. 1848, pp. 567–568.

50. Plantæ Regnellianæ—Leguminosæ, Scrophularineæ, Labiatæ. Linnæa, xxii. 1849, pp. 511–531, 564–567.

51. Flora Nigritiana, or a Catalogue of the Plants of the River Niger, the island of Fernando Po, and adjacent parts of Western

Leguminosæ inclusive were worked up by Dr. J. D. Hooker, and after his departure for India, were edited by Mr. Bentham.—The whole forms a portion of Sir W. J. Hooker's Niger Flora. 1849.

52. Report on the Dried Plants collected by Mr. Spruce in the neighbourhood of Para, North Brazil, in the months of July, August, and September 1849. Hooker, Journ. Bot. ii. 1850, pp. 209–212, 233–244; iii. pp. 111–120, 161–166, 191–200, 366–373; iv. pp. 8–18.

53. Plantæ Regnellianæ — Rubiaceæ. Linnæa, xxiii. 1850, pp. 443–446.

54. Florula Hongkongensis. An Enumeration of the Plants collected in the island of Hong Kong by Major J. G. Champion, 95th Regt. Hooker, Journ. Bot. iii. 1851, pp. 255–264, 306–312, 326–334; iv. pp. 41–50, 73–81, 116–123, 164–172, 193–199, 232–237, 296–305, 327–335; v. pp. 52–58, 129–137, 193–200; vi. pp. 1–9, 72–78, 112–117; vii. pp. 33–39.

55. Leguminosæ inter plantas Nilgherrenses Hohenackeri. Linnæa, xxiv. 1851, pp. 624–645.

56. Acanthaceæ novæ inter plantas Nilgherrenses Hohenackeri. Linnæa, xxiv. 1851, pp. 646, 647.

57. Plantæ Junghuhnianæ. 8vo. 1851–55. (Leguminosæ, pp. 205–269.)

58. Notes on the American species of ***Myristica.*** Hooker, Journ. Botany, v. 1853, pp. 1–9.

59. Notes on Humiriaceæ. Hooker, Journ. Botany, v. 1853, pp. 97–104.

60. Note on the *Leonia cymosa*, Mart. Hooker, Journ. Botany, v. 1853, pp. 215 ,216.

61. On some new genera and species of Brazilian Rubiaceæ. Hooker, Journ. Botany, v. 1853, pp. 229–236.

62. Notes on two little-known genera connected with the South-American Flora (*Taspura* and *Lecostemon*). Hooker, Journ. Botany, v. 1853, pp. 289–296.

63. On three new genera connected with the Indian Flora. Hooker, Journ. Botany, v. 1853, pp. 304–309.

64. Plantæ Muellerianæ; Mimosæ, additis speciebus novis nonnullis Australasicis, Drummondianis aliisque. Linnæa, xxvi. 1853, pp. 235–255.

65. Notes on North-Brazilian Gentianeæ, from the collections of Mr. Spruce and Sir Robert Schomburgk. Hooker, Journ. Botany, v. 1854, pp. 193–204

Mr. Spruce. Hooker, Journ. Botany, vi. 1854, pp. 321–333, 363–377.

68. On *Henriquezia verticillata*, Spruce, a new genus of Bignoniaceæ from the Rio Negro, in North Brazil. Hooker, Journ. Botany, vi. 1854, pp. 337–339.

69. On the South-American Triurideæ and leafless Burmanniaceæ from the collections of Mr. Spruce. Hooker, Journ. Botany, vii. 1855, pp. 8–17.

70. Additional note on *Arachis hypogæa*. Hooker, Journ. Botany, vii. 1855, pp. 177–179; Silliman's Journ. xx. 1855, pp. 202, 203.

71. Notes on the Roogee of Kumaon, *Megacarpæa polyandra*. Hooker, Journ. Botany, vii. 1855, pp. 353–357.

72. *Anon.* Historical Notes on Cultivated Plants by Dr. Antonio Targioni-Tozzetti. Summary by G. B. Journ. Hortic. Soc. ix. 1855, pp. 133–181.

73. *Anon.* 1. Géographie Botanique raisonnée, par Alph. de Candolle. 2. Introductory Essay to the Flora of New Zealand, by J. D. Hooker. 3. Introductory Essay to the Flora Indica, by J. D. Hooker and T. Thomson. 4. The Ferns of Great Britain and Ireland, by T. Moore, edited by J. Lindley. Edin. Rev. 1856, pp. 490–518.

74. Description of two American species of *Gnetum*. Hooker, Journ. Botany, viii. 1856, pp. 357–359.

75. On Prof. Nees von Esenbeck's Genera of Acanthaceæ, in the eleventh volume of De Candolle's 'Prodromus.' Hooker, Journ. Botany, ix. 1857, pp. 75–78.

76. Notes on Loganiaceæ [1856]. Linn. Soc. Journ. i. 1857 (Bot.), pp. 52–114.

77. On *Brachynema* and *Phoxanthus*, two new genera of Brazilian Plants. Linn. Soc. Trans. xxii. 1857, pp. 125–128.

78. Memorandum on the principles of Generic Nomenclature in Botany [1857]. Linn. Soc. Journ. ii. 1858 (Bot.), pp. 30–33.

79. Synopsis of the genus *Clitoria*. [1857.] Linn. Soc. Journ. ii. 1858 (Bot.), pp. 33–44.

80. On the Species and Genera of Plants, considered with reference to their practical application to Systematic Botany. (Extracted from a paper read before the Linnean Society of London, Nov. 15, 1858.) Nat. Hist. Rev. 1861, pp. 133–151.

81. Handbook to the British Flora; a description of the flowering plants and ferns indigenous to or naturalized in the British Isles. For the use of beginners and amateurs. London: Lovell Reeve. 1858. 8vo; pp. xvi, 655. (12*s.*)

Ed. II. *ib.* 1866. 8vo; pp. lxxx, 600.

Ed. IV., 1878. 8vo; pp. lxxx, 607. (Also dated 1880.)

Also an edition with 1295 illustrations from original drawings by W. Fitch. 1865. 2 vols. 8vo.

82. Synopsis of Legnotideæ, a tribe of Rhizophoraceæ. [1858.] Linn. Soc. Journ. iii. 1859 (Bot.), pp. 65–80.

83. Notice of the re-discovery of the genus *Asteranthos*, Desf., by Mr. Spruce. [1858.] Linn. Soc. Journ. iii. 1859 (Bot.), pp. 80, 81.

84. On the genus *Henriquezia* of Spruce. Linn. Soc. Trans. xxii. 1859, pp. 295–298.

85. Martius, Flora Brasiliensis. Tom. xv. Pars I. Pp. 350, 127 tab.—Leguminosæ, Papilionaceæ, exposuit G. B. Lipsiæ. 1859–62. Folio.

——. Pars II. 520 cols., 138 tab.—Leguminosæ, Swartziæ, Cæsalpiniæ, and Mimoseæ. Lipsiæ. 1870–76. Folio.

86. Notes on *Homalium*. [1859.] Linn. Soc. Journ. iv. 1860 (Bot.), pp. 31–38, 200.

87. Synopsis of Dalbergieæ, a tribe of Leguminosæ. Linn. Soc. Journ. iv. 1860 (Bot.), Suppl.

88. Notes on Ternstrœmiaceæ. [1860.] Linn. Soc. Journ. v. 1861 (Bot.), pp. 53–65.

89. Notes on Anonaceæ. [1860.] Linn. Soc. Journ. v. 1861 (Bot.), pp. 67–72.

90. Botanical Memoranda. [1860.] Linn. Soc. Journ. v. 1861 (Bot.), pp. 33–78.

91. On *Fissicalyx*, a new genus of Dalbergieæ. [1860.] Linn. Soc. Journ. v. 1861 (Bot.), pp. 78, 79.

92. Notes on Menispermaceæ. Linn. Soc. Trans. v. 1861 (Bot.), Suppl. ii. pp. 45–52. Tiliaceæ, pp. 52–74.

93. Notes on Bixaceæ and Samydaceæ. Linn. Soc. Trans. v. 1861 (Bot.), Suppl. ii. pp. 75–94.

94. On the species and genera of Plants, considered with reference to their practical application to Systematic Botany. [1858.] Nat. Hist. Review, 1861, pp. 133–151.

95. *Anon*. Primitiæ Floræ amurensis. By C. J. Maximowicz. Nat. Hist. Review, April 1861, pp. 126–132.

96. Outlines of Elementary Botany, as introductory to local floras. London: Lovell Reeve. 1861. 8vo; 45 pp. (2*s*. 6*d*.)

97. Flora Hongkongensis: a description of the flowering plants and ferns of the island of Hongkong. With a map of the island. London: Lovell Reeve. 1861. 8vo; pp. 20, lii, 482. (16*s*.)

98. Notes on Caryophylleæ, Portulaceæ, and some allied Orders. [1861.] Linn. Soc. Journ. vi. 1862 (Bot.), pp. 55–77.

99. Notes on Malvaceæ and Sterculiaceæ. [1861.] Linn. Soc. Journ. vi. 1862 (Bot.), pp. 97–123.

100. On *Inocarpus*. Linn. Soc. Journ. vi. 1862 (Bot.), pp. 146–150.

101. On *Fissicalyx* and *Prioria*, two recently published genera of Leguminosæ. [1861.] Linn. Soc. Trans. xxiii. 1862, pp. 389–391.

102. On African Anonaceæ. Linn. Soc. Trans. xxiii. 1862, pp. 463–480.

103. Flora Australiensis: a Description of the Plants of the Australian Territory. By George Bentham, assisted by Ferdinand Mueller. Published under the authority of the several Governments of the Australian Colonies. London: L. Reeve and Co. 7 vols. 8vo. 1863–1878.

104. Anniversary Address, 1863. [On the life-history of organized beings.] Linn. Soc. Proc. vii. 1864, pp. xi–xxix.

105. On the genera *Sweetia*, Sprengel, and *Glycine*, Linn., simultaneously published under the name of *Leptolobium*. [1864.] Linn. Soc. Journ. (Bot.), viii. 1865, pp. 259–267.

106. Anniversary Address, 1864. [Hybridism, dimorphism, &c.] Linn. Soc. Proc. viii. 1865, pp. ix–xxiii.

107. *Anon.* Decaisne on the Variability of Species. Nat. Hist. Rev., Jan. 1864.

108. *Anon.* South-European Floras.—1. Prodromus Floræ Hispanicæ, auctoribus M. Willkomm et J. Lange, i. 2. Flora Italiana, di F. Parlatore, i–iii. 3. Prodromus della Flora Toscana di T. Caruel, parts 1–3. Nat. Hist. Rev., July 1864, pp. 369–384.

109. *Anon.* De Candolle's Prodromus. Nat. Hist. Rev., Oct. 1864, pp. 506–528.

110. *Anon.* The Ancient and Modern Floras of Montpellier. Nat. Hist. Rev., April 1865, pp. 202–225.

111. Description of some new genera and species of tropical Leguminosæ. [1864.] Linn. Soc. Trans. xxv. 1866, pp. 297–320.

112. Notes on *Pueraria*, D.C., correctly referred by the author to *Phaseoleæ*. [1865.] Linn. Soc. Journ. (Bot.), ix. 1867, pp. 121–125.

113. Note on the genera *Darwinia*, Rudge, and *Bartlingia*, Ad. Brongn. [1865.] Linn. Soc. Journ. (Bot.), ix. 1867, pp. 176–182.

114. *Anon.* Index to vols. i.–xxv. Trans. Linn. Soc. 4to. 1867. Pp. 107.

115. Notes on Myrtaceæ. [1866–67.] Linn. Soc. Journ. (Bot.), x. 1869, pp. 101–166.

116. Note on the Stigmatic Apparatus of *Goodenovieæ*. [1867.] Linn. Soc. Journ. (Bot.), x. 1869, pp. 203–206.

117. On Geographical Biology: Anniversary Address. Linn. Soc. Journ. x. 1869, pp. lxv–c.

118. Anniversary Address, 1870. [Deep-sea fauna, succession of races, &c.] Linn. Soc. Proc. 1869–70, pp. lxxv–xciv.

119. Anniversary Address, 1871. [Progress of systematic biology.] Linn. Soc. Proc. 1870–71, pp. xxxiv-lxxviii.

120. Note on *Myrocarpus frondosus*, Allem. [1870.] Linn. Soc. Journ. (Bot.), xi. 1871, p. 265.

121. Revision of the genus *Cassia*. [1869.] Linn. Soc. Trans. xxvii. 1871, pp. 503–592.

122. Anniversary Address, 1872. [Notes on progress of biology.] Linn. Soc. Proc. 1871–72, pp. xxxiii–lvii.

123. Anniversary Address, 1873. [Study of vegetable anatomy and physiology.] Linn. Soc. Proc. 1872–73, pp. viii–xxix.

124. Outlines of Botany, with special reference to local floras. 4th ed. 12mo. 1*s*. 1873.

125. Notes on the styles of Australian Proteaceæ. [1871.] Linn. Soc. Journ. xiii. 1873 (Bot.), pp. 51–64.

126. Notes on the Classification, History, and Geographical Distribution of Compositæ. Linn. Soc. Journ. xiii. 1873 (Bot.), pp. 335–577.

127. On the recent progress and present state of Systematic Botany. Rept. Brit. Assoc. 1874, pp. 27–54.

128. Notes on the Gamopetalous Orders belonging to the Campanulaceous and Oleaceous Groups. Journ. Linn. Soc. (Bot.), xv. [1877], pp. 1–16. [1875.]

129. On the Distribution of the Monocotyledonous Orders into Primary Groups, more especially in reference to the Australian Flora, with notes on some points of Terminology. Journ. Linn. Soc. (Bot.), xv. (1877), pp. 490–520.

130. Notes on Euphorbiaceæ. Journ. Linn. Soc. (Bot.), xvii. (1880), pp. 185–267. [1878.]

131. Notes on Orchidaceæ. Journ. Linn. Soc. (Bot.), xviii. (1881), pp. 281–360.

132. Notes on Cyperaceæ, with special reference to Lestiboudois's "Essai" on Beauvois's genera. Journ. Linn. Soc. (Bot.) xviii. (1881), pp. 360–367.

133. Notes on Gramineæ. Journ. Linn. Soc. (Bot.), xix. (1882), pp. 14–134. [1881.]

134. On the Joint and Separate Work of the Authors of Bentham and Hooker's 'Genera Plantarum.' Journ. Linn. Soc. (Bot.), xx. (1884), pp. 305–308. [1883.]

In addition to these, there were various descriptions of plants in Hooker's 'Icones,' Edwards's 'Botanical Register,' Curtis's 'Botanical Magazine,' and Maunds's 'Botanist.'

In conjunction with Sir J. D. Hooker:—

135. Genera Plantarum ad exemplaria imprimis in herbariis Kewensibus servata definita, auctoribus G. Bentham et J. D. Hooker. Volumen I. Sistens Dicotyledonum polypetalarum ordines lxxxiii. Ranunculaceas—Cornaceas. Londini: Reeve et

Co. 1862–67. 8vo; pp. xv, 1040.—Vol. II. Caprifoliaceæ ad Plantagineæ. Pp. viii, 1279. 1876.—Vol. III. Monochlamydeæ, Gymnospermeæ, Monocotyledones. Pp. xi, 1258. 1883.

136. Bentham, George, and J. D. Hooker. Note on the embryo of *Ancistrocladus*. Linn. Soc. Journ. vii. 1863 (Bot.), p. 111.

The following papers are by Örsted only, Bentham having disclaimed any cooperation beyond supplying notes to the plants:—

"Bentham, George, og A. Örsted." Centralamerikas Rubiaceer. Kjöbenh. Vidensk. Meddel. 1852, pp. 23–61.

"——, ——." Compositæ Centroamericanæ. Kjöbenh. Vidensk. Meddel. 1852, pp. 65–121.

"——, ——." Leguminosæ Centroamericanæ. Kjöbenh. Vidensk. Meddel. 1853, pp. 1–19.

"——, ——." Scrophularineæ Centro-americanæ. Kjöbenh. Vidensk. Meddel. 1853, pp. 20–31.

"——, ——." Labiatæ Centroamericanæ. Kjöbenh. Vidensk. Meddel. 1853, pp. 32–42.

This is by Cosson, on a note by Bentham:—

"Bentham, George, et Cosson, E." Compositarum genus novum Algeriense, *Warionia*. Paris: Bull. Soc. Bot. France, xix. 1872, pp. 165, 166.

**James Buckman** was born at Cheltenham in 1814, and was educated for the medical profession; but, disliking his studies for it in London, he returned to his native place and began business as a chemist.

Whilst in London he began to collect plants from the vicinity of the metropolis, and made a considerable collection. In 1842 he was appointed Curator of the Birmingham Philosophical Institute, which he quitted on his election as Professor at the Agricultural College at Cirencester. This post he held for 16 years, retiring in 1863 to a farm at Bradford Abbas, in Dorsetshire, where he died Nov. 23, 1884. He was elected Fellow February 5, 1850. He stands as author of 37 papers in the Royal Society's 'Catalogue,' on biological and geological subjects.

**Heinrich Robert Göppert** was born in 1800, and died at Breslau, where he was Professor of Natural History, on May 18, 1885. He was a man of tireless energy, nearly 250 papers being assigned to his pen in the Royal Society's 'Catalogue.'

of four children; he received his early education at Swansea Grammar School, ending by his becoming "head boy."

During his school-days he began to collect shells on the shore of Swansea Bay; and Mr. Griffiths, his schoolmaster, Mr. Dillwyn, and other friends having encouraged him, he made it a regular pursuit. At seventeen he was articled to a solicitor in his native town, but gave his spare time to dredging on the coast. In 1828, when only nineteen, he sent a paper to this Society, being a "Synopsis of the Pulmobranchous Mollusca of Great Britain," which is printed in our 'Transactions,' occupying 60 pages. In 1836 he attended the Bristol Meeting of the British Association, and there met Prof. E. Forbes. For many years he continued a constant attendent of the Annual Meetings of the Association, being Local Treasurer at Swansea in 1848, President of the Biological Section in 1877 at Plymouth, and Vice-President of the Association at its second visit to his native town in 1880.

He entered into business as solicitor in Swansea, and married a daughter of Mr. R. J. Nevill, of Llangenneck Park, but still prosecuted his labours, first with a row-boat, afterwards with a yacht, the 'Osprey,' which he purchased expressly. He removed to London, and was called to the bar in 1856 with a view to London practice, but finally retired from the legal profession in 1866 and removed to Ware Priory. In 1862 the first volume of his valuable manual, 'British Conchology,' came out, in due time followed by four others, ending in 1869.

Hitherto his dredging operations had been within 200 fathoms; but during the cruise of the 'Lightning,' in 1868, a successful haul had been made from 650 fathoms. The 'Porcupine' was in 1869 fitted up for deeper exploration, and Gwyn Jeffreys undertook the superintendence of the scientific portion, as his coadjutors, Sir Wyville Thomson and Dr. Carpenter, were engaged in official duties during the early part of the season. The dredge was successfully worked at the then unprecedented depth of 1476 fathoms, thus paving the way for the greater exploit in the next cruise of 2435 fathoms. The Report of the Cruise was drawn up by Jeffreys, and presented to the Royal Society, some of the results being of the greatest importance and interest.

The second 'Porcupine' expedition was also generalled by Gwyn Jeffreys; the coast of Portugal being specially investigated. In 1871 he visited the United States, and in 1875 he saw to the outfit of the 'Valorous,' and reported on her cruise. In 1880 he engaged in his last deep-sea dredging, in the French inquiry, in the Bay of Biscay, in 'Le Travailleur.'

His wife died in 1881, and Dr. Gwyn Jeffreys removed from Ware to Kensington, where he died Jan. 24, 1885, from apoplexy; the previous evening he had attended a lecture given by his son-in-law, Prof. Moseley, at the Royal Institution.

He was elected Fellow 7th Dec. 1865, and Treasurer to the

Linnean Society from 1875 to 1880. He also exercised the same function at the Geological Society: his methodical business habits were also appreciated by the Royal Society, on whose Council he served.

His splendid collections were bought by the American Government two years ago.

**JAMES HENRY MANGLES** was the son of James Mangles, captain in the Royal Navy, Chairman of the London and South Western Railway Company. He was born in 1832, and studied for the bar, but did not practise. He inherited his father's likings for gardening pursuits and devoted himself particularly to the genus *Rhododendron*, in which his knowledge was admitted to be special. He took an active part in the work of the Royal Horticultural Society for a few years before his death, which happened at his residence Valewood, near Haslemere, August 24, 1884. He was elected a Fellow of the Society, April 24, 1874.

Major F. J. **SIDNEY PARRY**, of 18 Onslow Square, was born in 1811, and joined the 17th Lancers as Cornet in 1831, but left the army in 1835, and having devoted much of his time to entomology, he gave himself henceforward almost exclusively to its pursuit. His earliest paper seems to have been published in 1872, being a communication to the Entomological Society in that year on a new genus of Lucanidæ from New Zealand. Although he did not confine his labour to this family of Coleoptera, he became more especially associated with it, publishing from time to time several memoirs, and a revised list in 1870 of 357 species; his collection of this family being considered the most complete in existence. He was elected Fellow, November 15, 1842, and died at his daughter's house, the Warren, Bushy Heath, February 1, 1885.

**EDUARD RÜPPELL** was born on November 20, 1794, at Frankfort. On his father's death he left the Gymnasium and engaged in business. His love for natural history impelled him in 1817 to undertake a journey to Egypt, where he spent some time. The same year witnessed the founding of the Senckenberg Natural History Society in his native town, and induced him to prosecute studies in Pavia and Genoa universities, to prepare himself for scientific travelling. In 1822 he set out on a six years' journey to Egypt, Nubia, and Kordofan; and in 1832 he again journeyed to Abyssinia and Arabia. He presented his rich collections to the Museum of his native city, and published his results in the 'Abhandlungen,' besides contributing important papers to various periodicals, as also issuing several volumes on the Zoology of N.E. Africa. In 1831 he was elected Foreign Member of the Linnean Society; and died at Frankfort, December 10, 1884, aged 91 years, 53 years after Foreign Membership of the Society. In 1840 he was awarded the Gold Medal of the Royal Geographical Society.

**Joseph Sidebotham** was born in 1822, and died at Erlesdene, Bowdon, on Saturday, May 30, 1884.

He was brought up to the business of calico printing, and for a long period was the head of a firm carrying on a very successful trade in that department of industry, at Strines, in Derbyshire. In early life he became interested in the study of both entomology and botany; also in astronomical research, and in connection with his intimate friend, Mr. James Nasmyth, C.E., then of Patricroft, constructed some large and effective reflecting telescopes. Amongst his other numerous pursuits, Mr. Sidebotham did not neglect photography, and on the publication of the collodion process in 1851, he sought and obtained an interview with the late Frederick Scott Archer, and was probably the first to introduce the working details of that beautiful process to lovers of photography in the north of England.

He was one of the chief founders of the Manchester Photographic Society, and became its first secretary, being a member at the period of his death. The waxed-paper process in his hands, as well as the collodio-albumen, were worked to great perfection, and for several years he was a recognized leader in dry-plate work. Of late years his health caused alarm to his family and friends; he spent two winters at Mentone, where he took a large number of excellent negatives on collodio-albumen plates. His residence at that delightful watering-place seemed for a time to recruit his strength considerably.

He left three sons and three daughters. The burial took place at the parish-church of Bowdon on Wednesday, June 2nd.

Mr. Sidebotham published 25 papers, of which he is credited in the Catalogue of Scientific Papers of the Royal Society. His first paper was "Plants collected in Westmoreland;" and the others are also of botanical and zoological character, entomology being a favourite subject.

**Carl Theodor Ernst von Siebold** was born at Würzburg on February 16, 1804, and was brother of the Japanese traveller and botanist. He was bred to the medical profession, and practised for some time at Königsberg until 1835, when he was appointed Master of the Lying-in Hospital at Dantzic. In 1840 he moved to Erlangen, there teaching comparative anatomy and zoology. Five years later he was made Professor of Zoology at Freiburg, and there began his 'Lehrbuch der vergleichenden Anatomie der wirbellosen Thiere,' in conjunction with others. In 1849 he started, in conjunction with Kölliker, the 'Zeitschrift für wissenschaftliche Zoologie,' which still is the most prominent zoological periodical in Germany. The next year he became Professor at Breslau; and in 1853 he was appointed to the University of Munich to fill the chair of Comparative Anatomy, and Director of the Zoological Cabinet; these positions he retained to the last. He was elected a Foreign Member of our Society and of the Royal in 1858, and in 1867 Corresponding Member of the Institute of France. His published memoirs amount to more than 130. Since 1874 his health declined, and on April 6 he died at Munich. (See Biograph. Skizze, Zeitsch. f. Wissensch. Zool. Bd. xlii. 1885.)

## APPENDIX.

### Abstract of Paper.

### On the Germination of Seeds after Prolonged Submersion in Salt Water. By James Walter White, Esq. (Communicated by Dr. R. C. A. Prior, F.L.S.)

[Read 7th May, 1885.]

The facts described in the present paper bear upon the germination of seeds after prolonged submersion in salt water in the estuary of the river Avon at and below Bristol.

Three or four years ago the Dock and Harbour authorities of this city bestirred themselves to improve the navigation of the port. In deepening the water-channels a large quantity of accumulated deposit was taken up by steam-dredgers both from the bed of the Avon and from the floating harbour. These dredgings were deposited in a disused stone-quarry in the Avon gorge. A staging was erected on the river-bank, barges were brought alongside, and by means of steam cranes and tramways some thousands of tons were tipped into the quarry. The bulk of the matter scraped up from the bed of the river was broken limestone and alluvial mud, with a good deal of town and ship rubbish, bones, and brickbats. From the basins there came also a quantity of ashes and refuse thrown overboard from ships in the harbour. All this was tipped from the trams by manual labour until the bed of the quarry became raised above the level of the tow-path; and then the trams were hauled up the incline by steam-power, while men distributed the contents. No horses were employed on the work. The limestone-rubble and heavier matters of course remained where they were thrown, but the semi-fluid mud flowed, lava-like, into the recesses and depressions of the surface. In this way a space of about an acre was covered with dredgings to a depth of from twenty to thirty feet, and then it was necessary to cease operations in order that the mass might drain and settle before making further additions. This brings us to the winter of 1882.

As time went on and spring advanced the soil, now drained and washed free from salt by the rains, became firm enough to walk upon, and shortly afterwards I noticed a profuse and varied vegetation, both on the stony rubble heaps and on the softer soil around, and was much surprised at the interesting character and luxuriance of the plants which during the summer successively came into prominence. I examined the spot periodically and attentively, and collected the following species, which grow on the banks of the Avon above and below Bristol, but have not heretofore been found at or near this place, viz.:—

*Ranunculus sceleratus.*
*Senebiera Coronopus.*
*S. didyma.*
*Sinapis arvensis.*
*S. nigra.*
*Nasturtium sylvestre.*
*Lepidium ruderale.*
*Cochlearia anglica.*
*Diplotaxis muralis.*
*D. tenuifolia.*
*Malachium aquaticum.*
*Erodium cicutarium.*
*Trifolium fragiferum.*
*Medicago denticulata.*
*M. maculata.*
*Melilotus officinalis.*
*Vicia angustifolia.*
*V. hirsuta.*
*Apium graveolens.*
*Conium maculatum.*
*Helosciadium repens.*
*Sedum acre.*
*Centranthus ruber.*
*Artemisia vulgaris.*
*Matricaria Chamomilla.*
*Symphytum officinale.*
*Erigeron acris.*
*Helminthia echioides.*
*Tragopogon pratensis.*
*Aster Tripolium* and var. *discoideus.*
*Tanacetum vulgare.*
*Solanum Dulcamara.*
*S. nigrum.*
*Veronica Beccabunga.*
*V. Anagallis.*
*Linaria minor.*
*Scrophularia Balbisii.*
*Plantago Coronopus.*
*Chenopodium rubrum.*
*C. album.*
*Atriplex angustifolia.*
*A. hastata.*
*Suæda maritima.*
*Salicornia herbacea.*
*Triglochin maritimum.*
*Poa compressa.*
*Sclerochloa procumbens.*
*Bromus madritensis.*
**Lepturus filiformis.*

There were also some species which were formerly recorded as growing in the Avon valley, but which have latterly become extinct or extremely rare, viz.:—

*Erodium moschatum.*
*Medicago minima.*
*Polypogon monspeliensis.*
*Gastridium lendigerum.*

A few British plants (chiefly maritime) not before noted in the Bristol district, viz.:—

*Vicia lutea.*
*Ajuga Chamæpitys.*
*Echinochloa Crus-Galli.*
*Chenopodium hybridum.*
**Rumex maritimus.*

Also the various cereal grasses—wheat, barley, oats, and rye—with other grasses grown as fodder for animals, all of which are, or have been, brought by ships into the port of Bristol; as well as sundry weeds of cultivation, presumably companions of the cereals just mentioned, and from the same source, viz.:—

*Papaver Rhœas.*
*Thlaspi arvense.*
*Sinapis alba.*
*Lychnis Githago.*
*Centaurea Cyanus.*
*Setaria viridis.*
**S. glauca.*
*Bromus arvensis.*
*B. secalinus.*

And, lastly, aliens and casuals from various parts of the globe, viz.:—

*Saponaria Vaccaria.*
*Trifolium hybridum.*
*Melilotus alba.*
*Cucurbita maxima.*
**Xanthium spinosum.*
**Astragalus*, sp.
*Amsinkia*, sp.
*Polygonum Fagopyrum.*
*Cannabis sativa.*
*Phalaris canariensis.*
**Panicum miliaceum.*

In the following winter dredging was resumed; the barges and steam-cranes were again busy with fresh material; and a good deal of the space which had been alive with luxuriant vegetation was deeply buried under more seed-bearing soil of like composition. As the summer of 1884 advanced most of the plants previously noted appeared again in company with some others. The new arrivals are included in the above list, but are distinguished by asterisks.

It will be seen that many of these species are to be regarded with interest, not because they are rare, but rather on account of their unexpected appearance in such a peculiar situation. The luxuriant dimensions of most of the plants is worthy of remark. Some stems of *Bromus madritensis* were three feet high and bore panicles as big as one's head; and a single root of *Sclerochloa procumbens* would overspread a square yard of ground.

And now by what means came such a large number of plants to spring up spontaneously, and whence came the seed? In reply to these questions, I will only venture to say that intimate acquaintance with the locality and its botanical features, together with close observation of the events herein described, have convinced me that the seeds of all these plants were contained in the soil at the time of its deposition; that they had previously been lying imbedded in the Avon mud without losing their vitality; and that, notwithstanding their long submersion, they were ready to spring into life when the favourable opportunity offered.

## DONATIONS TO LIBRARY, 1884–85.

### Volumes and more important pamphlets, exclusive of exchanges, chiefly from private individuals.

Agassiz, A. The Tortugas and Florida Reefs. 4to. Cambridge (Mass.), 1883. **Sir J. Lubbock.**

Åhrling, E. Carl von Linnés Brefvexling. 8vo. Stockholm, 1885. **Author.**

Albrecht, Prof. P. (1) Das Os Intermedium Tarsi der Säugethiere. 8vo. Leipzig, 1883.—(2) Note sur le Basioccipital des Batraciens Anoures. 8vo. Brussels, 1883.—(3) Note sur la Présence d'un Rudiment de Proatlas sur un exemplaire de *Hatteria punctata*. 8vo. Brussels, 1883.—(4) Note sur une Hémivertèbre Gauche surnuméraire de *Python Sebæ*. 8vo. Brussels, 1883.—(5) Notes sur un sixième Costoide cervical chez une *Hippopotamus amphibius*, L. 8vo. Brussels, 1882.—(6) Sur les Éléments Morphologiques du Manubrium du Sternum chez les Mammifères. 8vo. Brussels, 1884.—(7) Homodynamies qui existent entre la Main et le Pied des Mammifères. 8vo. Brussels, 1884.—(8) Sur les Spondylocentres Epipituitaires du Crâne, la nno-existence de la Poch de Rathke, et la présence de la Chorde Dorsale et de Spondylocentres dans le Cartilage de la Cloison du Nez des Vertébrés. 8vo. Brussels, 1884.—(9) Sur la valeur Morphologique de la Trompe d'Eustache et les dérivés de l'Arc Palatin, de l'Arc Mandibulaire, et de l'Arc Hyoïdien des Vertébrés. 8vo. Brussels, 1884. **Author.**

Annals and Magazine of Natural History. 5th ser., vols. xiii., xiv. 8vo. Lond., 1884. **Dr. W. Francis.**

Annual Report of the Dulwich College Science Society. 8vo. Lond., 1879 and 1883. **S. W. Carruthers.**

Bailey, C. Structure, Occurrence in Lancashire, and Source of Origin of *Naias graminea*, Del., var. *Delilei*, Magnus. 8vo. Lond., 1884. **Author.**

Baker, J. G. (1) Flora of the English Lake District. 8vo. Lond., 1885.—(2) The Fathers of Yorkshire Botany. 8vo. Huddersfield, 1884. **Author.**

Barr, P. and F. W. Ye Narcissus or Daffodyl. 8vo. Lond., 1884. **Authors.**

Battandier et Trabut. Flore d'Alger. 8vo. Alger., 1884. **Authors.**

Beccari, O. Malesia. Vol. ii. fasc. 1, 2. 4to. Genova, 1884. **Author.**

Bertkau, Dr. P. Ueber den Verdauungsapparat der Spinnen. 8vo. Bonn, 1885. **Sir J. Lubbock.**

Bidie, G. (1) Coca, its Source, Culture, Uses, etc. 8vo. Madras, 1885.—(2) Literature of South Indian Botany. 8vo. 1885.—(3) Fauna of Southern India. 8vo. 1884. **Author.**

Blomefield, L. Reminiscences of Prideaux John Selby, and Twizell House; also, Brief Notices of other North Country Naturalists. 8vo. Bath, 1885. **Author.**

Borre, A. Preudhomme de. Note des Glomerides de Belgique. **Author.**

Bos, H. Bijdrage tot de Kennis van den Lichaamsbouw der Roode Boschmier (*Formica rufa*). 8vo. Groningen, 1885. **Author.**

Bowman, F. H. The Structure of the Wool-Fibre, in its Relation to the Use of Wool for Technical Purposes. 8vo. Manchester, 1885. **Author.**

Braithwaite, Dr. R. The British Moss-Flora: fam. VIII. Tortulaceæ I. Roy. 8vo. Lond., 1884. **Author.**

Brongniart, C. Observations sur la Manière dont les Mantes construisent leurs oothèques; sur la structure des oothèques, sur l'éclosion et la première mue des larves. 8vo. Paris, 1881. And 3 other pamphlets by same Author. **Sir J. Lubbock.**

Brown, J. E. Forest Flora of South Australia. Pts. 4–6. Fol. Adelaide, 1884. **Author.**

Buysman, M. Difference between Sea and Continent Climate, with regard to Vegetation. **B. Daydon Jackson.**

Campbell, F. M. On Instinct. 8vo. Hertford, 1884. **Author.**

Caruel, Prof. T. Nuovo Giornale Botanico Italiano. Vol. xvi. 8vo. Firenze, 1884. **T. Caruel.**

Castle, L. Cactaceous Plants, their History and Culture. 8vo. Lond., 1884. **Author.**

Cathcart, Earl of. On the Cultivated Potato. 8vo. Lond., 1884. **Author.**

Certes, A. (1) De l'action des hautes pressions sur la vitalité des Micro-Organismes d'Eau Douce et d'Eau de Mer. 4to. Paris, 1884.—(2) De l'emploi des Matières Colorantes dans l'étude physiologique et histologique des Infusoires vivants. 8vo. Paris, 1885. **Author.**

Christy, R. M. On the Species of the Genus *Primula* in Essex. 8vo. Buckhurst Hill, Essex, 1884. **Author.**

Christy, T. New Commercial Plants and Drugs. No. 8. 8vo. Lond., 1885. **Author.**

Colenso, Rev. W. An Account of Visits to, and Crossing over the Ruahine Mountain-Range, Hawke's Bay, N. Z., and of the Natural History of that Region (1845–1847). 8vo. Napier, N. Z., 1884. **Author.**

Collin, J. Om Limfjordens tidligere og Nuværende Marine Fauna med særligt hensyn til Bloddyrfaunaen. 8vo. Kjöbenhavn, 1884. **Author.**

Coues, Dr. E. Key to North-American Birds. 4to. Boston, 1884. **Author.**

Dawson, Prof. J. W. (1) Address to the American Assoc. for Advancement of Science. 8vo. Salem, 1883.—(2) Notes on Prehistoric Man in Egypt and the Lebanon. 8vo. Lond., 1884.—(3) Cretaceous and Tertiary Floras of Brit. Columbia. 4to. Montreal, 1883. **Author.**

Day, Dr. F. Notes on Breeding of Fishes. 8vo. Gloucester, 1884. **Author.**

Dehnecke, C. Ueber nicht assimilirende Chlorophyllkörper. 8vo. Cöln, 1880. **Dr. D. Brandis.**

Düsing, Dr. Die Factoren welche die Sexualität entscheiden. 8vo. Jena, 1883. **G. J. Romanes.**

Entomologisk Tidskrift. Vol. v. 8vo. Stockholm, 1884. **J. Spångberg.**

Entomologist. Vol. xvii. 8vo. Lond., 1884. **T. P. Newman.**

Entomologist's Monthly Magazine. Vol. xxi. 8vo. Lond., 1884–85. **Editors.**

Ernst, Prof. A. El Guachamacá. 8vo. Caracas, 1885. **Author.**

Fletcher, J. J. Catalogue of Papers and Works relating to Mammalian Orders Marsupialia and Monotremata. 8vo. Sydney, 1884. **Author.**

Flower, Prof. W. H., and Dr. J. G. Garson. Catalogue of Specimens illustrating Osteology and Dentition of Vertebrated Animals, Recent and Extinct, in Museum Roy. Coll. Surg. of Engl. 8vo. Lond., 1884. **Council of College.**

Forbes, H. O. Three Months' Exploration in the Tenimber Islands, or Timor Laut. 8vo. Lond., 1884. **Author.**

Fry, G. The Theory and Practice of Sweet Ensilage. 8vo. Lond., 1885. **Author.**

Gadow, Dr. H. Catalogue of Birds in British Museum.—Passeriformes. Vol. ix. 8vo. Lond., 1884. **Trustees Brit. Mus.**

Gardner, J. S. (1) British Cretaceous Nuculidæ. 8vo. Lond., 1884.—(2) Monograph of the British Eocene Flora. Vol. ii. Pts. 1–2. Gymnospermæ. 4to. Lond., 1883–84. **Author.**

Gordon, Surg.-Gen. C. A. Reports Medical Officers, Chinese Imp. Maritime Customs Service, 1871–82. 4to. Lond., 1884. **C. A. Gordon.**

Graber, V. Ueber die Helligkeits- und Farbenempfindung einiger Meerthiere. 8vo. 1885. **Author.**

Gray, Prof. Asa. (1) Botanical Contributions 1884–85. 8vo. 1885.—(2) Characteristics of North-American Flora. 8vo. 1884.—(3) Gender of Names of Varieties. 8vo. New York, 1884.—(4) Memoir of G. Engelmann and Oswald Heer. 8vo. 1884.—(5) A Revision of North-American Species of the Genus *Oxytropis*. **Author.**

Griffin and Co. Year-Book of the Scientific and Learned Societies of Gt. Britain and Ireland. 8vo. Lond., 1884. **Publishers.**

Guide to Galleries of Mammalia, British Museum. 8vo. Lond., 1885. **Trustees Brit. Mus.**

Guide to Galleries of Fossil Fishes in British Museum. 8vo. Lond., 1885. **Trustees Brit. Mus.**

Gunn, T. E. Ornithological Invasions of East Anglia. 8vo. Norwich, 1885. **Author.**

Gurney, J. H., jun. (1) Catalogue of Birds of Norfolk. 8vo. Lond., 1884. —(2) List of Diurnal Birds of Prey. 8vo. Lond., 1884. **Author.**

Hanstein, Dr. R. von. Bibliotheca Historico-Naturalis. 34 Jahrg. 1884. 8vo. Göttingen, 1884. **Messrs. Williams and Norgate.**

Herdman, Prof. W. A. Report on Tunicata, Voy. of H.M.S. 'Challenger.' 4to. Edinb., 1882. **Author.**

Higgins, Rev. H. H. Biographical Sketches in Botany. 8vo. Liverpool, 1880. **Author.**

Hinde, G. J. (1) Fossil Calcisponges from the Well-boring at Richmond, Surrey. 8vo. Lond., 1884.—(2) Structure and Affinities of the Family Receptaculitidæ. 8vo. Lond., 1884. **Author.**

Hoggan, Dr. G. Nerve-Terminations and Lesions. 1882–84. **Author.**

Hooker, Sir J. D. (1) The Student's Flora of the British Islands. 3rd ed. 8vo. Lond., 1884.—(2) The Flora of British India. Vol. iv. 8vo. Lond., 1883–85. **Author.**

[Hoop, J. de.] Table Alphabétique des Espèces et des Principales Variétés du Genre Lis (*Lilium*). 8vo. Gand, 1884. **Author.**

Hopkinson, J. Transactions and Reports of Herts Nat. Hist. Soc. and Field Club. 8vo. Hertford, 1883–84. **Editor.**

——. Remarks on Land Mollusca, with reference to their Investigation in Hertfordshire. 8vo. Hertford, 1884. **Author.**

Houghton, Rev. W. Birds of the Assyrian Monuments and Records. 8vo. Lond., 1884. **Sir J. Lubbock.**

Humphry, Prof. G. M. Observations in Myology. 8vo. Cambridge, 1872. **Dr. J. Murie.**

Hutton, Capt. F. W. Origin of Fauna and Flora of New Zealand. Pts. 1 and 2. 8vo. Dunedin, 1883–84. **Author.**

Ibbotson, H. Ferns of York, including also Nidderdale and Districts around Thirsk, Scarboro, and Whitby. 8vo. York, 1884. **J. G. Baker.**

Kidston, R. (1) Fructification of *Eusphenopteris tenella* and *Sphenopteris microcarpa*. 8vo. Lond., 1882.—(2) Report on Fossil Plants collected by Geolog. Survey of Scotland in Eskdale and Liddesdale. 4to. Edinb., 1882. **Author.**

Koch, A. (1) Oesterreichische Monatschrift für Thierheilkunde mit Berücksichtigung der Viehsucht und Landwirthschaft. Band viii. 4to. Wien, 1884. —(2) Revue für Thierheilkunde und Thierzucht. Band vii. 8vo. Wien, 1884. **Prof. T. S. Cobbold.**

Kölliker, Prof. A. (1) Die Bedeutung der Zellenkerne für die Vorgänge der Vererbung. 8vo. Würzburg, 1885.—(2) Die embryonalen Keimblätter und die Gewebe. 8vo. Leipzig, 1884. **Author.**

Koenen, A. von. Beitrag zur Kenntniss der Placodermen des norddeutschen Oberdevon's. 4to. Göttingen, 1883. **Prof. P. M. Duncan.**

Kuntze, O. Monographie der Gattung *Clematis*. 8vo. Berlin, 1885. **Author.**

Langley, J. N. Structure of the Dog's Brain. 8vo. Lond., 1870. **G. J. Romanes.**

Lawes, Sir J. B., and J. H. Gilbert Animals fed and slaughtered as Food. 8vo. Lond., 1883. **Author.**

Lefroy, General Sir J. H. Botany of Bermuda. 8vo. Washington, 1884. **Author.**

Lendenfeld, Dr. R. von. Ueber Cœlenteraten der Südsee. Pts. 1–4. 8vo.

Linton, W. J. Ferns of the English Lake Country. 2nd ed. 8vo. Windermere, 1878. **Rev. W. Newbould.**

Lovén, Prof. S. On *Pourtalesia*, a Genus of Echinoidea. 4to. Stockholm, 1883. **Author.**

Macoun, J. Catalogue of Canadian Plants. Parts 1–2. 8vo. Montreal, 1883–84. **Canadian Survey.**

M'Intosh, Prof. W. C. British Species of *Cyanea*, and the Reproduction of *Mytilus edulis*, L. 8vo. Lond., 1885. **Author.**

Masters, Dr. M. T. Life on the Farm—Plant Life. 8vo. Lond., 1885. **Author.**

Miall, Prof. C. L. (1) Structure of Skull of *Rhizodus*.—(2) Structure and Classification of Labyrinthodonts. **G. J. Romanes.**

Mivart, Prof. St. George. Man and Apes. 8vo. Lond., 1873. **Dr. J. Murie.**

Moore, F. Lepidoptera of Ceylon. Pts. 9–10. 4to. Lond., 1884–85. **Govt. of Ceylon.**

Morren, E. La Belgique Horticole: Annales de Botanique et d'Horticulture, 1884. 8vo. Liége, 1884. **M. C. Cooke.**

Mureau, L. A. M. Voyage of La Perouse round the World in 1785–88. Vols. i., ii. 8vo. Lond., 1798. **J. G. Galton.**

Murphy, M. European Flax; its Culture to the Soils of New Zealand. Pts. 1, 2, 3. 8vo. Christchurch, N. Z., 1880–82. **Author.**

Nature. Vols. xxx.–xxxi. 4to. London, 1884–85. **F. Macmillan.**

Newton, Prof. A. Ornithology. (Encycl. Brit.) 4to. Edinb. **Author.**

Nicholson, G. The Illustrated Dictionary of Gardening. Vol. i., A to E. 4to. Lond., 1885. **L. Upcott Gill.**

Nitzsch, Dr. C. L. Osteografische Beiträge zur Naturgeschichte der Vogel. 8vo. Leipzig, 1811. **Dr. J. Murie.**

Norman, Rev. A. M. (1) Presidential Address, Tyneside Naturalists' Field Club. 8vo. Newcastle-upon-Tyne, 1884.—(2) Exploration of the Faröe Channel by 'Knight Errant.' 8vo. **Author.**

Olsen, O. T. The Fisherman's Nautical Almanac. 8vo. Grimsby, 1884 & 1885. **Author.**

Owen, Sir R. Antiquity of Man. 8vo. Lond., 1884. **Author.**

Phillips, E. (1) Origin of the Domestic Cock. 8vo. Lond., 1884.—(2) The Dog of Sacred History. 8vo. Lond., 1885. **Author.**

Pierre, L. Flore Forestère de la Cochinchine. 5, 6 fasc. Fol. Paris, 1883. **Author.**

Planchon, J. E. (1) La Végétation de Montpellier et des Cévennes. 8vo. Montpellier, 1879.—(2) Lettres Inédites de Jacques Gay et de Victor Jacquemont. 8vo. Paris, 1884. **Author.**

Portraits of William J. Burchell, F.L.S., and Dr. Josef Maly. **Dr. R. C. A. Prior.**

Preston, Rev. T. A. Wiltshire Rainfall, 1884. 4to. Marlborough, 1885. **Author.**

Redtenbacher, J. Uebersicht der Myrmeleoniden-Larven. 4to. Wien, 1884. **Sir J. Lubbock.**

Renault, B. Note sur les Sphenozamites. **Author.**

Report of Meeting of the British Association (Southport). 8vo. Lond., 1884. **Council Brit. Assoc.**

Report of Botanical Record Club for 1883. 8vo. Manchester, 1884. **C. Bailey.**

Reports of East of Scotland Union of Naturalists' Societies for 1884. 8vo. Dundee, 1884. **Union.**

Report on the Horticultural Gardens, Lucknow. Fol. Allahabad, 1883–84. **Dr. H. Cleghorn.**

Report on Measurements of Growth of Australian Trees on the Nilgiris. Fol. Madras, 1883. **Dr. H. Cleghorn.**

Report on Measurements of Rates of Growth of *Casuarina* in the Nellore District. Fol. Madras, 1884. **Dr. H. Cleghorn.**

Report on Government Botanical Gardens at Saharanpur and Mussoorie. Fol. Allahabad, 1884. **Dr. H. Cleghorn.**

Report, Salmon Commissioners of Tasmania, to June, 1884. **A. Johnston.**

Results of 20 Years' Observations on Botany, Entomology, Ornithology, and Meteorology taken at Marlborough College, 1865–1884. Long 4to. **Rev. T. A. Preston.**

Retzius, Prof. G. Das Gehörorgan der Wirbelthiere. Vol. ii. Fol. Stockholm, 1884. **Author.**

Reuter, O. M. Catalogus præcursorius Poduridarum Fenniæ. 8vo. **Sir J. Lubbock.**

Reuther, Dr. E. Beiträge zur Entwickelungsgeschichte der Blüthe. Roy. 8vo. **Sir J. Lubbock.**

Richardson, Dr. B. W. The Asclepiad. Vol. i. 8vo. Lond., 1884. **Author.**

Ringer, Prof. S. On the Frog's Heart. **G. J. Romanes.**

Robertson, D. Notes on the Common Limpet. 8vo. Glasgow, 1884. **Author.**

Roth, H. L. Animal Parasites of the Sugar-Cane. 8vo. Lond., 1885. **Author.**

Saint-Lager, Dr. Remarques historiques sur les Mots Plantes Mâles et Plantes Femelles. 8vo. Paris, 1884. **Author.**

Saunders, E. (1) Synopsis of British Hymenoptera. Pt. 1. Andrenidæ. Pt. 2. Apidæ.—And (2) Further notes on terminal segments of Aculeate Hymenoptera. 8vo. Lond., 1882–84. **Author.**

Schlich, Dr. W. (1) Suggestions regarding Forest Administration in Central Provinces. fol. Calcutta, 1883.—(2) Ditto in Hyderabad. fol. Calcutta, 1883.—(3) Ditto in Kulu. fol. Calcutta, 1883. **India Office.**

Schlegel, H. Essay on the Physiognomy of Serpents. Translated by Prof. T. S. Traill. 8vo. Edinb., 1843. **Dr. J. Murie.**

Science Gossip. Vol. xx. Roy. 8vo. Lond., 1884. **Editor.**

Scott, D. H. Entwickelungsgeschichte der Gegliederten Milchröhren der Pflanzen. 8vo. Würzburg, 1881. **Author.**

Selwyn, Alf. R. C., and G. M. Dawson. Physical Geography and Geology of the Dominion of Canada. 8vo. Montreal, 1884. **Authors.**

Semper, C. Ueber Generationswechsel bei Steinkorallen und ueber das M. Edwards'sche Wachsthumgesetz der Polypen. 8vo. Leipzig, 1872. **Sir J. Lubbock.**

South, R. Synonymic List of British Lepidoptera. 8vo. Lond., 1884. **T. P. Newman.**

Sturm, J. Deutschlands Flora in Abbildungen nach der Natur mit Beschreibungen. 12mo. Nürnberg, 1814. **F. Crisp.**

Tate, Prof. R. (1) Description of New Species of Mollusca of Upper Eocene Beds at Table Cape. 8vo. Hobart, 1884.—(2) Descriptions of New Species of South-Australian Plants. 8vo. Adelaide, 1884.—(3) Notes of a Critical Examination of the Mollusca of the Older Tertiary of Tasmania, Alleged to have Living Representatives. 8vo.—(4) Notes on Physical and Geological Features of Basin of the Lower Murray River. 8vo. Adelaide, 1884. **Author.**

Tepper, J. G. Otto. (1) A Beautiful and Rare Beetle. 8vo. Adelaide, 1884.—(2) A Rare and Curious Hemipterous Insect. 8vo. Adelaide, 1884.—(3) Plants of Kangaroo Island. 8vo. Adelaide, 1884; and several other pamphlets. **Author.**

The Gardening World. 4to. Lond. Vol. i. 1884–85. **B. Wynne.**

The Garden. Vols. xxvi.–xxvii. 4to. Lond., 1884–85. **W. Robinson.**

The Gardener's Chronicle. Vols. xxii.–xxiii. Fol. Lond., 1884–85. **Editor.**

Thomas, Hon. H. S. Report on Pearl Fisheries and Chank Fisheries. Fol. Madras, 1884. **India Office.**

Trois, E. F. (1) Ricerche sulla Struttura della Ranzania Truncata. Partes 1, 2.—(2) Sopra alcuni Esperimenti. 8vo. Venezia, 1884–85. **Author.**

True, F. W. U.S.A. Cat. of Aquat. Mammals (Int. Fish. Exhib.). 8vo. Washington, 1884. **Commissioners.**

Vätke, W. Reliquiæ Rutenbergianæ. 8vo. Bremen, 1885. **Author.**

Walker, Rev. F. A. Nine Hundred Miles up the Nile. 8vo. Lond., 1884. **Author.**

Walsingham, Lord. On some Probable Causes of a Tendency to Melanic Variation in Lepidoptera of High Latitudes. 8vo. Leeds, 1885. **Author.**

White, C. An Account of the Regular Gradation in Man and in different Animals and Vegetables. 4to. Lond., 1799. **Dr. J. Murie.**

Whitehead, C. Mould or Mildew on Hop Plants. **Author.**

Wood-Mason, J. Report on Tea-Mite and the Tea-Bug of Assam. 8vo. Lond., 1884. **A. Whitehouse.**

Young, A. Natural History of Salmon. 8vo. Lond., 1854. **Dr. J. Millar.**

Zigno, Barone Achille De. (1) Catalogo Ragionato dei Pesci Fossili. 8vo. Venezia, 1874.—(2) Nuovi Pesci Fossili della Famiglia dei Balistini scoperti nel Terreno Eoceno del Veronese. 4to. Napoli, 1884. **Author.**

Zoological Collections, Voyage of H.M.S. 'Alert,' 1881-82. 1 Vol. 8vo. Lond., 1884. **Trustees Brit. Mus.**

Zoologist, 1884-85. 8vo. Lond., 1885. **T. P. Newman.**

# PROCEEDINGS

OF THE

# LINNEAN SOCIETY OF LONDON.

(SESSION 1885-86.)

November 5th, 1885.

Sir JOHN LUBBOCK, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Mr. Christy exhibited Orchids of the genus *Catasatum*, showing that, owing to the plants having been moved, the flower in both instances had become malformed.

Mr. E. A. Heath showed a Golden Eagle in its characteristic plumage of the second year.

Mr. J. Carter exhibited a Collection of Seeds lately introduced, remarkable for their peculiarities as specimens under the microscope.

There was shown for the Baron Von Mueller a collection of skeleton leaves of species of *Eucalyptus* prepared by Mrs. Lewellin of Melbourne. These confirm Baron Von Mueller's observations as to definite layers and the relation of these to the skeletonizing process. The leaves in decaying produce no bad odour. Von Mueller's observations do not support M. Riviere's statement that Bamboos are as good as *Eucalypti* to subdue malaria—the former dry up, but do not exhale the volatile oil as do the latter; and the Eucalypts, moreover, absorb moisture as quickly as Willows, Poplars, and Bamboos.

Mr. J. G. Baker made remarks on an exhibition by Mr. W. T. Thiselton Dyer of Darwin's Potato (*Solanum Maglia*) grown at Kew, the weight of twelve tubers being 28 oz.; also the Papa de Oso, Bear's Potato (*Solanum tuberosum*, var.), grown out of doors from tubers received from Dr. Ernst of Caracas, who obtained them from Merida, where they are found wild.

The following papers were read:—

1. "Contributions to the Flora of the Peruvian Andes." By John Ball, F.L.S.
2. "Monograph of Recent Brachiopoda." By Thos. Davidson, F.L.S.

## November 19th, 1885.

Professor H. N. **Moseley**, F.R.S., afterwards Mr. **Frank Crisp**, Vice-President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Mr. A. D. Michael exhibited and described the remarkable nymphal stage of *Tegeocranus cepheiformis*, a species belonging to the family Oribatidæ, which he had lately discovered for the first time in England. The whole life-history of this animal he has succeeded in tracing, having in the first instance been led to the correct result by dissecting the already fully-formed imago out of the inert nymph. The creature in its nymphal stage is an exceedingly strange and beautiful one, carrying on its back as concentric shields the dorsal portions of all its cast skins; these are bordered by a series of singular projections, each having a roseleaf-like cuticular process of transparent membrane, with chitinous nervures. The drawing of the nymph was first sent to Mr. Michael two years ago by Herr Pappe of Bremen.

Mr. Charles Stewart showed, under the microscope, the presumed stridulating apparatus of a species of *Sphærotherium* from Borneo, which, however, possessed certain structural modifications differing from those described by Mr. G. C. Bourne.

The Secretary drew the notice of the Fellows to several portfolios of British Algæ and Mosses, and of British and Australian Ferns, Algæ, and Zoophytes, which had been prepared by Mr. F. W. Smith of Falmouth.

Dr. J. Murie exhibited and made remarks on the caudal end of the spine of a Haddock, which showed an arched deformity, partly recalling what is recorded of the Humpbacked Cod (*Morrhua macrocephala*).

Mr. G. J. Fookes called attention to some twin Apples of teraof which, however, fell off early; but a considerable number of apples which grew to maturity were good examples of syncarpy. (See Masters's 'Vegetable Teratology,' p. 47.)

The Secretary afterwards read a letter from the Rev. Leonard Blomefield (Jenyns) intimating his presentation to the Society of a large framed photograph of himself, he having been elected a Fellow on the 19th November, 1822, viz. exactly 63 years ago. The Secretary recorded the fact of his being the oldest living Member of the Society; and, furthermore, that while a student at Cambridge, Mr. Blomefield was offered the post of Naturalist to the exploring-expedition of the 'Beagle,' which he declining was ultimately accepted by Mr. Charles Darwin. The Chairman proposed that a special vote of thanks be accorded to Mr. Blomefield for his donation, which resolution was unanimously agreed to by the Fellows present.

The digestive glands of the Pitcher-plant and section of immature pollen-sacs of the Yew were shown under the microscope for Mr. Arthur Cole.

The following papers were read:—

1. "On the Perignathic Girdle of the Echinoidea." By Prof. P. Martin Duncan, F.L.S.

2. "On the Anatomy of *Sphærotherium*." By Mr. G. C. Bourne. (Communicated by Professor Moseley, F.L.S.)

3. "Contributions to South-African Botany.—Orchideæ." Part II. By Harry Bolus, Esq., F.L.S.; with Additional Notes by N. E. Brown, A.L.S.

Professor Moseley then read the following extracts from a letter by Mr. G. C. Bourne, who is now investigating the natural history of the Chagos Archipelago in the Indian Ocean.

"Diego Garcia, 18th Sept. 1885. . . . . Arrived here on the 15th. The climate is at present very wet, but the rainy season is nearly over. The lagoon is fifteen miles long by about five miles across, with three islands. The main one is densely covered with cocoa-nut trees and other vegetation. Judging by the fragments thrown up on shore, there is a great variety of Corals, *Tubipora* being abundant, though *Madrepora*, *Porites*, and *Meandrina* are the common sorts; but *Fungia* and *Lobactis* are also plentiful. As yet I have seen but one Lepidopteron and a few Beetles. Birds consist chiefly of Noddies and Terns.

"Of Crabs, *Ocypoda*, *Gecarcinas*, and various Hermit-Crabs are in swarms. *Birgus latro* does not occur on our islet. *Periophthalmus* is in great quantity on the outer shores. I have found a peculiar Bryozoon growing on one of the buoys in the lagoon; also a remarkable-looking sea-Planarian of a rich purple-black colour, with a narrow band of bright yellow running round the margin of its body. Large black Holothurians are abundant." . . . .

Professor Moseley afterwards read extracts from another letter of an Oxford Graduate, Mr. Sydney S. Hickson.

"Talisse Island, N. Celebes,
5th Sept., 1885.

". . . . I have been able to make several dredging-expeditions in shallow water, *i. e.* to 20 fathoms. The Straits are very rich in Antedons. One species of a bright emerald-green colour is abundant on the coral-reefs between this island and Kinabohoutar. Not 100 yards from the house where I am now writing there is *Tubipora* (alive), *Heliopora* (alive), and of course numerous other species of corals. At Limbè I found small species of *Stylaster* (alive); but I hope to find it here also. Nautilus shells are common on the shore; and I have noticed a few with the animal decomposing in them. I am told they are sometimes seen alive on the surface of the water; but on the approach of a canoe they at once dive into the sea and are then very difficult to catch. I shall try lobster-pots and other dodges. . . . *Lingula* I have not yet found; but am told by the Comptrolleur of the Senggir Islands that they are found in plenty there. . . . Maleos are abundant, and I can get any number of them and their eggs. At Koeang, when I was making the ascent of a volcano, I saw hundreds, many of them within a stone's throw of me. I have found a cave filled with edible birds' nests; but it belongs to a chief who is very jealous of it. Have been on one unsuccessful Babirussa hunt, but intend to organize another on Limbè Island. The Sapiutan (*Anoa depressicornis*) is common in some places. The Black Monkey (*Cynopithecus nigrescens*) is very common, being found in all the mangrove swamps. Earthworms and Leeches I have not yet seen; but perhaps they will turn up in November or December when it rains. *Periophthalmus* is very common here; and I shall be able to make a study of it. There are plenty of Butterflies, but very few Beetles. My thanks are due to Captain Maclear and the Officers of the 'Flying Fish' for much help. My present plan is to study here for some months and do some quiet work; later on to go to the mainland to investigate fauna of the great inland lakes, which is very interesting."

## December 3rd, 1885.

Sir JOHN LUBBOCK, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Richard A. Bastow, Esq., Lieut-Col. Linby Blathwayt, Samuel James Capper, Esq., Charles Ford, Esq., John Henry Gurney, Esq., jun., George Bond Howes, Esq., William Henry Jones, Esq., Rev. Willis Fleming Aston Lambert, Sir Herbert Eustace Maxwell, Bart., Charles Tuckor Musson, Esq., William D'Arcy

Godolphin Osborne, Esq., D. Petrie, Esq., and George Thom, Esq., were elected Fellows.

The President announced from the Chair the receipt of three letters, viz.:—(1) The Elizabeth Thompson Science Fund (Stamford, Connecticut) of $25,000, to be appropriated to Scientific Investigations, "not already otherwise provided for;" applications to be forwarded to Dr. C. S. Minot, 25 Mount Vernon Street, Boston, Massachusetts, U.S.A. The first grant to be made in January 1886.—(2) Prize of 500 francs, founded by Augustin Pyramus de Candolle, for the best monograph of a genus or a family of plants. MSS. to be sent to the Président de la Société de Physique et d'Histoire naturelle de Genève, Switzerland by the 1st October, 1889.—(3) The Royal Society of New South Wales, Sydney, offer medals and money prizes for original researches, among others, on Chemistry of Australian Gums and Resins, and on Marine Flora of Port Jackson, by 1st May, 1886, and on Infusoria of Australia by 1st May, 1887.

The Secretary exhibited for Mr. Buysman of Middleburg, Holland, a preparation of the floral parts of *Aconitum Napellus*, L.

Mr. Vincent Ind Chamberlain, F.L.S., exhibited and made remarks on a species of Trapdoor Spider and its nest, obtained in California.

Dr. Charles Cogswell showed oil-paintings of *Eugenia Iambos*, L., and *Casparea porrecta*, drawn by Miss E. Gray in Bermuda.

The following papers were read:—

1. "Contribution to the Study of the Relative Effects of Different Parts of the Solar Spectrum on Transpiration in Plants." By the Rev. George Henslow, F.L.S.
2. "Notes on Parasites collected by the late Charles Darwin." By Prof. T. Spencer Cobbold, F.L.S.
3. "On the *Castilloa elastica* of Cervantes, and some allied Rubber-yielding Plants." By Sir J. D. Hooker, C.B., F.L.S.
4. "On Variations in the Form of the Cirri in certain Comatulæ." By P. Herbert Carpenter, F.R.S. (Communicated by W. Percy Sladen, Sec. L.S.)
5. "Colombian Species of the Genus *Diabrotica*.—Part I." By Joseph S. Baly, F.L.S.

## December 17th, 1885.

**Frank Crisp**, LL.B., Treasurer and Vice-President,
in the Chair.

The Minutes of the last Meeting were read and confirmed.

Dr. Maxwell Masters showed a branch with leaves and fruit of

*Heritiera littoralis*, var. *macrophylla*, received from Professor Maxinu Cornu of the Jardin des Plantes, Paris. The adult leaves, of very large size, are dark green above and silvery white beneath. The glistening appearance is due to an investment of shining peltate membranous scales; and this peculiarity has given rise to the name of "Looking-glass Tree." This Sterculaceous tree is a native of the tropics of the Old World in the vicinity of coasts, and occurs also in the inland hills of Eastern Bengal. Kurz regarded *H. littoralis* and *H. macrophylla* as specifically distinct; but the points relied on, Dr. Masters says, are not constant or trustworthy.

Mr. Charles Stewart exhibited the stridulating-organs of a Spiny Lobster (*Palinurus*). He showed, under the microscope, the file-like bow and its two tubercles; also by means of a softened specimen of the carapace he produced the peculiar grating noise which the animal makes during life.

Mr. J. G. Baker exhibited, for Mr. George Nicholson, specimens of *Lycopodium complanatum* collected by the Rev. A. Lawson on the Somersetshire side of Exmoor, near Porlock, thus corroborating those who hitherto have ascribed to it a British habitat.

A fine example of the common Pole-Cat (*Mustela putorius*) from near Caermarthen was shown for Mr. Edward A. Heath.

Mr. Clement Reid drew attention to a series of fossil seeds and plants from the Forest-bed of the Cromer district, Norfolk. Among these were examples of *Pinus sylvestris*, *Abies excelsa*, and *Trapa natans* from Mundesley; *Pinus Abies* from Trimmingham; *Quercus Robur* from Happisburgh; *Osmunda regalis* from Paston, near Barton; and from various localities seeds of *Thalictrum*, *Ranunculus aquatilis*, *Nymphar lutea*, *Taxus baccatus*, *Hippuris vulgaris*, *Potamogeton heterophyllus*, *P. crispus*, *P. trichoides*, *P. flabellatus*, *Zannichellia palustris*, *Rumex maritimus*, and *Ceratophyllum demersum*, all in a remarkably fine condition of preservation.

Mr. Thomas Christy exhibited a plant of *Angræcum sesquipedale* in flower, aud a plant of *Catasetum purum* showing flowers erect and reversed on the same spike. In none of the flowers was the ovary visibly twisted; but in long-ovaried Orchids it is often very difficult to detect the twisting of the ovary by external aspect. This specimen illustrated the fact that light, or the absence of light, was not the cause of the alteration of position.

The following specimens were exhibited for Mr. Edward M. Holmes, viz.:—(1) The fruit of *Afzelia cuangensis* from Limpopo, Natal, sent to him as the pod of a Mahogany-tree. (2) The fruit of *Trichilia Dregei* from the same district; oil is obtained from the seeds by boiling; and with this as an insecticide the Kaffirs anoint their bodies.

Mr. John Jenner Weir drew attention to, and made comments on, the recently issued illustrated folios of 'Exotische Schmetterlinge' by Drs. Staudinger and Langhaus.

Mr. F. R. Cheshire gave an epitome of his late researches on the Tongue of the Bee, describing the structure and the mode in which he believes the suction of nectar to take place.

The following papers were read:—

1. "Notes on Entomostraca collected by Mr. A. Haly in Ceylon." By Dr. G. Stewardson Brady, F.L.S.
2. "On a Small Collection of Orchids from Madagascar." By Henry N. Ridley, F.L.S.
3. "Revisional Monograph of the Recent Ephemeridæ.—Part IV." By the Rev. A. Eaton, M.A.
4. "Colombian Species of the Genus *Diabrotica*.—Part. II." By Joseph S. Baly, F.L.S.

## January 21st, 1886.

WILLIAM CARRUTHERS, F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Messrs. Veitch exhibited, in illustration of Dr. Masters's paper, a series of living examples of Conifers, among which were *Abies magnifica*, *A. lasiocarpa*, *A. concolor*, *A. Fortunei*, *A. subalpina*, *A. nobilis*, *A. grandis*, and *A. amabilis*, *Pseudo-Larix Kæmpferi*, *Picea Omorika*, *Pinus Peucei*, *Arthrotaxis selaginoides*, and *A. laxifolia*.

Mr. Edward Morell Holmes exhibited a specimen of the Ergot of Diss (*Arundo tenax*) from Algeria. This Ergot is said to be more active medicinally, is slenderer than that of Rye, and twice or thrice its length; it is attributable to the fungus *Claviceps purpurea*. Mr. Holmes also showed a fasciated branch of the common Holly.

Dr. Charles Cogswell drew attention to dried specimens of the six species of Maples (*Acer*) of Canada collected by him in Nova Scotia, and of *Sisyrinchium Bermudianum* and *Bryophyllum calycinum* from Bermuda. He contrasted the great difference of climate and vegetation of the continent and island, observing that the Gulf-stream had doubtless an important influence on the Bermudan Flora. Moreover, it was noticeable that *Bryophyllum*, like the Maples, put on a brilliant autumnal tint.

There was exhibited, for Mr. Buysman, examples of *Rudbeckia* and *Lupinus* as teaching-specimens of medicinal plants.

Mr. J. Starkie Gardner exhibited a large collection of Fossil Plants from the island of Mull.

The following papers were read:—

1. "Contributions to the History of certain Species of Conifers." By Dr. Maxwell Masters, F.L.S.

2. "Description of *Strongylus Axei*, with Remarks on its Affinities." By Professor T. Spencer Cobbold, F.L.S.

3. "Remarks on some Fossil Leaves from the Island of Mull, Scotland." By J. Starkie Gardner, F.L.S.

## February 4th, 1886.

Sir John Lubbock, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Mr. James Dallas exhibited a specimen of the Glossy Ibis (*Plegadis falcinellus*, L.), which was purchased last spring from Mr. James H. Clyde of Bradworthy Vicarage, near Holdsworthy, Devon, in whose possession, or that of his family, it had been from the time it was killed in the neighbourhood. It is mentioned by Morris in his 'British Birds,' vol. iv. p. 178, as follows:—"In the 'Western Times' of Oct. 11th, 1851, it was recorded that a specimen of this exceedingly rare and interesting British visitor was shot at Holdsworthy in North Devon a few days before the above date; it was on the 7th September." This specimen has now been deposited in the Albert Memorial Museum, Exeter. There is another specimen of this bird in the collection, in which the beak is more curved. It is said to have been shot at South Moulton, October 1851, and was presented to the Museum by Mr. William Toombs.

Mr. Frederick J. Hanbury exhibited and made remarks on a series of forms of the genera *Hieracium* and *Carex* obtained by him on the coasts of Caithness and Sutherland last autumn, all being new to the British Flora, and representatives of Scandinavian plants. Among them were *H. norvegicum*, Fr., and its var. *farinosa*, *Carex aquatilis*, Vahl, var. *cuspidata*, Læshted., *C. rigida*, Good, var. *infer-alpina*, Læshted., and others, besides a large form of *Euphrasia* from Reay Links, Caithness.

Mr. Clarence Bartlett exhibited a remarkable specimen of Caterpillar about 7 inches long, of a steel-grey colour, hairy and spiny, which he believed to have been brought from Africa.

Mr. W. H. Beeby drew attention to an example of *Equisetum litorale*, Kuhlewein, gathered by him on Bisley Common, Surrey, a species new to Britain.

Mr. John C. Sawer exhibited an example of a superior sort of the essential oil of *Lavandula vera*, and a specimen spike of the plant preserved in glycerine. The plant had been obtained by crossing several good varieties, seeds having been obtained from the South of France &c., and grown by him near Brighton under conditions imitating the natural habitat of the plant.

Mr. A. Hammond drew attention to a microscopic section of the integument of the larva of a Dipterous insect, *Stratiomys Chamæleon*, raising the question as to whether the polygonal areas, described by M. Viallanes, on the external surface of the cuticle are cellular in their nature, as Mr. Hammond suggested, or mere surface-markings.

The following papers were read:—

1. "On the Relation between the Bloom on Leaves and the Distribution of the Stomata." By Francis Darwin, F.L.S.

2. "On *Slavina* and *Ophidonais*." By Edward C. Bousfield, Esq. (Communicated by Dr. J. Murie, F.L.S.)

3. "On the probable Wild Source of the whole Group of Cultivated True Limes." By Brigade-Surgeon E. Bonavia, Ind. Med. Depart. (Communicated by W. T. Thiselton Dyer, C.M.G., F.L.S.)

4. "The Relative Length of the Segments of Limbs in the Chick during Development." By Prof. Richard J. Anderson, F.L.S.

## February 18th, 1886.

Professor St. George J. Mivart, F.R.S., in the Chair.

The Minutes of the last Meeting were read and confirmed.

Prof. Hutcheson Macaulay Posnett was elected a Fellow.

There was exhibited, for Mr. William Joshua, a series of over 130 specimens of Lichens from Jamaica, these having been collected and preserved by Mr. J. Hart, of Gordon Town, and afterwards identified by Dr. J. Müller (Arg.) of Geneva. A mounted set of some of the rarer and most interesting of the above were shown under low powers of the microscope.

Mr. Thomas Christy exhibited some flowers preserved by a new chemical process, which is said to retain the original colouring very well. He also called attention to a new *Cinchona*-bark from South Africa, and to a plant of *Erythoxylon Coca* in fruit.

Mr. Herbert Goss showed examples of the Wild Parsnip (*Pastinaca sativa*, L.) gathered by him on the Thames-side near Moulsey, Surrey.

The following specimens were shown under the microscope, in illustration of Mr. Michael's communication, viz. the ♂ and ♀ of *Glyciphagus platygaster*, and the two sexes *in coitu* of *G. dispar*.

The following papers were read:—

1. "On Acari of the Genus *Glyciphagus*, found in Moles' Nests." By Albert D. Michael, F.L.S.

2. "Notes on the Botany of Western South America." By John Ball, F.L.S.

### March 4th, 1886.

Sir John Lubbock, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Gilbert C. Bourne, Esq., William Henry Catlett, Esq., and Thomas A. Cotton, Esq., were elected Fellows.

There was exhibited, for Miss J. E. Onslow, a volume of water-colour drawings of British Plants which had been sketched from nature by the late Miss Moseley of Great Malvern. The volume was one of nine drawn by her.

Dr. Spencer Cobbold exhibited specimens to illustrate his paper, viz.:—Examples in spirit of the larvæ of *Strongylus tetracanthus* in the so-called *Trichonema*-stage: A, Free specimens from the lumen of the intestine; and B, Encysted or embedded in small pellets or cocoons of vegetable débris. Both from the Horse.

Mr. George Murray exhibited *Rhipilia Andersonii*, preserved in spirit, from the Mergui Archipelago; and Mr. J. G. Baker exhibited dried specimens of Ferns, respectively to illustrate their papers.

The following papers were read:—

1. "Description of *Strongylus Arnfieldi* (Cobb.), with Observations on *S. tetracanthus* (Mehl)." By Prof. T. Spencer Cobbold, F.R.S., F.L.S.

2. "On a new Species of *Rhipilia* (*R. Andersonii*) from the Mergui Archipelago." By George Murray, F.L.S.

3. "On two new Species of *Lentinus*, one of them growing on a large *Sclerotium*." By George Murray, F.L.S.

4. "On a Collection of Ferns made in North Borneo by the Bishop of Singapore and Sarawak." By J. G. Baker, F.R.S., F.L.S.

### March 18th, 1886.

Sir John Lubbock, Bart., President in the Chair.

The Minutes of the last Meeting were read and confirmed.

Dr. Masters exhibited a specimen from the Duke of Devonshire's woods at Chatsworth, showing a large globular mass of short densely branched shoots hanging from the end of a branch of *Pinus sylvestris*. Dr. Masters pointed out that such growths were either the result of injury from Mites (*Phytoptus*) or from other causes, or that in other cases they resulted from bud-variation. Seedling-variations also occasionally occurred. Such forms were the origin of some of the curious dwarf Conifers met with in gardens, such as the Chanbrassil Fir. A similar case of dimorphism in the foliage in a species of *Leptospermum* was also shown by Dr. Masters, having been obtained from Baron Ferdinand von Mueller of Melbourne.

Mr. Fawcett showed, under the microscope, sections of the fruit and rhizome of *Thonningia malagasica*; and Professor Duncan exhibited Corals, both in illustration of their papers.

The following papers were read:—

1. "On new Species of *Balanophora* and *Thonningia*, with a Note on *Brugmansia Lowi*." By William Fawcett, F.L.S.
2. "On the Madreporaria of the Mergui Archipelago." By Professor P. M. Duncan, F.L.S.

### April 1st, 1886.

Sir John Lubbock, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Mr. J. G. Baker exhibited a specimen of *Scolopendrium Devalayi*, a new species discovered by the Abbé Devalay in the province of Yunnan.

Dr. Day exhibited several photographs of the skulls of *Salmo salar* and *Salmo fario* showing the great difference between the two when adult. In *S. salar* the premaxillaries and maxillaries are expanded, thin, and shallow, whilst in *S. fario* quite the reverse obtains, namely they are shortened, thickened, and deep.

The following papers were read:—

1. "Botanical Observations in the Naga Hills." By C. B. Clarke, F.L.S.
2. "Index Floræ Sinensis.—An Enumeration of all the Plants known from China proper, Formosa, Hainan, the Corea, the Luchu Archipelago, and the Island of Hong Kong, together with their Distribution and Synonymy." By Francis B. Forbes, F.L.S., and W. Botting Hemsley, A.L.S.

### April 15th, 1886.

W. T. THISELTON DYER, C.M.G., F.R.S., Vice-President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Rochfort Connor, Esq., was elected a Fellow.

Specimens of so-called "Madrepore Marble" from Iowa (U.S.A.), which contained abundance of a species of *Stromatopora*, were exhibited for Mr. G. A. Treadwell.

Mr. E. A. Heath showed living examples of *Dendrobium densiflorum* and *D. suavissimum*; and Mr. J. G. Baker laid before the Fellows drawings of new and remarkable Ferns in illustration of the Roraima Report.

The following papers were read:—

1. "On some new Genera and Species of African Curculionidæ." By Francis P. Pascoe, F.L.S.
2. "Botany of the Roraima Expedition of 1884, being Notes on the Plants observed by Everard im Thurn; the Determinations and Descriptions of new Plants by Prof. Oliver, F.R.S., F.L.S., and others." (Communicated by W. T. Thiselton Dyer, C.M.G., F.L.S.)
3. "List of Fungi from Queensland and other parts of Australia; with Descriptions of New Species.—Part III." By Christopher E. Broome, F.L.S., and the Rev. M. J. Berkeley, F.R.S., F.L.S.

### May 6th, 1886.

Sir JOHN LUBBOCK, Bart., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Prof. Henry Marshall Ward was elected a Fellow.

The President alluded to the loss the Society had met with in the somewhat sudden death of Prof. Thomas Spencer Cobbold, a Fellow of old standing, and who had contributed many important papers to the Society's Journals and Transactions, his latest being now in the press. Dr. Cobbold had bequeathed to the Society's Library 60 handsomely bound volumes, chiefly rare and valuable Monographs on his special subjects of Parasites. The President then moved—"That a special vote of thanks be accorded to Mrs. Cobbold and her Family for the donation from her husband, our late much respected Fellow," which Resolution was carried unanimously by acclamation.

The President announced that the following Auditors for the Examination of the Treasurer's Accounts had been nominated by the Council:—

For the Fellows, Mr. J. Jenner Weir and Mr. Frederick V. Dickins; for the Council, Mr. Thomas Christy and Mr. Francis B. Forbes; and by a show of hands these were unanimously elected.

Mr. Daniel Morris exhibited a number of living luminous beetles (*Pyrophorus noctilucus*) from Dominica. These had been obtained by him on a recent visit to that island, and kept alive on the voyage by feeding them with pieces of sugar-cane. On the meeting-room being darkened, the phosphorescent show of light emitted by the insects was very brilliant.

Dr. Charles Cogswell called attention to two framed water-coloured drawings of *Lettsomia aggregata* and *Fothergilla Gardeni*, shown by him previous to their being deposited in the Rooms of the Medical Society of London as a botanical memento of the two distinguished physicians.

Sir John Lubbock explained that while prepared to read his paper as announced—"On the Forms of Seedlings and the Causes to which they are due"—he would, with the consent of the Fellows, defer this and give it as his Address at the Anniversary Meeting (24th May), as Mr. Romanes's communication to follow, was anticipated, would occupy a considerable time in delivery and discussion.

The following papers were read:—

1. "Physiological Selection; an additional suggestion on the Origin of Species." By Dr. G. J. Romanes, F.R.S., F.L.S.
2. "Descriptions of new Species of Galerucidæ." By Joseph S. Baly, F.L.S.
3. "On some new Species of the Genus *Metzgeria*." By William Mitten, A.L.S.

The Anniversary Meeting was announced for Monday, 24th May, at 3 P.M.

## May 24th, 1886.

### *Anniversary Meeting.*

Sir John Lubbock, Bart., President, in the Chair.

Mr. J. Jenner Weir, on behalf of the Auditors, presented the Annual Statement of Accounts as follows (p. 131).

The Secretary then read his Report of the deaths, withdrawals, and elections of new Fellows for the past year, as follows:—

Since the last Anniversary Meeting 18 Fellows had died, or their deaths been ascertained, viz.:—

### Fellows (18).

Randal Hibbert Alcock.
Dr. Thomas Boycott.
Dr. George Dransfield Brown.
Dr. Wm. Benjamin Carpenter.
Dr. Thomas Spencer Cobbold.
Col. Alfred Augustus Davidson.
Dr. Thomas Davidson.
James Deane.
The Rev. James Hannington.
Dr. Francis Harris.
The Rev. Henry Hawkes.
John Sutherland Law.
John Armory Lowell.
The Rev. William Williamson Newbould.
James William Powell.
Dr. Augustus Burke Shepherd.
Col. Charles Ratcliff.
H.H. The Maharaja of Travancore.

### Foreign Members (4).

Edmond Boissier.
Prof. Henri Milne-Edwards.
Prof. Johann Roeper.
Louis Réné Tulasne.

### Associates (2).

Thomas Edward.
Charles William Peach.

During the past official year 3 Fellows had withdrawn, viz.:—

Dr. Henry Cooper Rose.
The Rev. Thomas Richard Henry Sturges.
William Wright Wilson.

And 31 Fellows and 2 Associates had been elected.

During the past year there had been received as Donations from private individuals to the Library 101 volumes and 387 pamphlets and separate impressions of memoirs. From the various Universities, Academies, and Scientific Societies there had also been received in exchange and otherwise 189 volumes and 309 detached parts; besides 50 volumes obtained by exchange and donation from the Editors and proprietors of independent periodicals. The Council, at the recommendation of the Library Committee, had sanctioned the purchase of 90 volumes and 125 parts of important works. The total additions to the Library were therefore 430 volumes and 812 separate parts.

The following are the numbers of Books bound during the last year:—In half-morocco 122, in full cloth 377, in roan 33, in boards or half-cloth 100, rebacked (half-morocco and cloth backs) 129, relabelled 50, sundry repairs 21. Total 832.

The Secretary, on behalf of the President, having read the Bye-Laws governing the elections,—

The President then opened the business of the day, and the Fellows proceeded to ballot for the Council and Officers.

## *Investments on 30th April,* 1886.

| | £ | s. | d. | | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| ls | 3280 | 14 | 6 | @ 100⅝ | 3301 | 4 | 7 |
| politan Board of Works 3½ per cent. Stock | 1079 | 11 | 3 | @ 108¼ | 1168 | 13 | 2 |
| Indian Peninsula Railway 5 per cent. Guaranteed Stock | 630 | 0 | 0 | @ 138¾ | 874 | 2 | 6 |
| Do. Do. 4 per cent. Debenture Stock | 100 | 0 | 0 | @ 103⅝ | 103 | 12 | 6 |
| Bridge Railway Co. 4 per cent. Stock (viz., Mr. Bentham's Bequest Library Fund) | 450 | 0 | 0 | @ 110 | 495 | 0 | 0 |
| | | | | | £5942 | 12 | 9 |

## *Receipts and Payments of the Linnean Society from May* 1, 1885, *to April* 30, 1886.

| *Receipts.* | | | | £ | s. | d. |
|---|---|---|---|---|---|---|
| Bankers' on 1st May, 1885 | | | | 792 | 11 | 7 |
| Investments | | | | 183 | 5 | 2 |
| Fees | | | | 228 | 0 | 0 |
| tributions | | | | 1200 | 4 | 7 |
| ns | | | | 90 | 0 | 0 |
| blications :— | | | | | | |
| ansactions | £134 | 10 | 1 | | | |
| urnals | 91 | 5 | 2 | | | |
| roceedings and Catalogues | 2 | 8 | 0 | | | |
| | | | | 228 | 3 | 3 |
| | | | | 5 | 0 | 0 |
| | | | | £2727 | 4 | 7 |

| *Payments.* | | | | £ | s. | d. |
|---|---|---|---|---|---|---|
| Taxes and Insurance | | | | 22 | 13 | 9 |
| Repairs and Furniture | | | | 33 | 10 | 9 |
| Coals and Gas | | | | 72 | 17 | 0 |
| Salaries and Commission | | | | 424 | 4 | 5 |
| Library :— | | | | | | |
| Books | £141 | 10 | 3 | | | |
| Binding | 106 | 12 | 8 | | | |
| | | | | 248 | 2 | 11 |
| Expenses of Publications :— | | | | | | |
| Printing | £470 | 16 | 9 | | | |
| Illustrations | 423 | 17 | 3 | | | |
| Distribution | 39 | 4 | 6 | | | |
| | | | | 933 | 18 | 6 |
| Miscellaneous Printing and Stationery | | | | 38 | 6 | 6 |
| Petty expenses (including Tea and Postage) | | | | 71 | 18 | 0 |
| Investment of Mr. Bentham's Legacy | | | | 500 | 0 | 0 |
| Balance at Bankers' on 30th April, 1886 | | | | 381 | 12 | 9 |
| | | | | £2727 | 4 | 7 |

FRANK CRISP, *Treasurer.*

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ie foregoing accounts have been examined and found correct.
J. JENNER WEIR, THOMAS CHRISTY,
FRED. V. DICKINS, F. B. FORBES,
W. PERCY SLADEN,
*Auditors.*

.886.

The Ballot for the Council having closed, the President appointed Mr. James Britten, Mr. John Hopkinson, and Mr. Charles Tyler, Scrutineers. The votes having been counted and reported to the President, he declared the following Members to be removed from the Council, viz.:—Mr. Thomas Christy, Mr. George R. M. Murray, Dr. G. J. Romanes, Mr. Howard Saunders, and Lord Walsingham.

And the following to be elected into the Council, viz.:—Mr. Arthur Bennett, Mr. James Edmund Harting, Mr. Albert D. Michael, Prof. St. George J. Mivart, and Dr. Henry Trimen.

The Ballot for the Officers having closed, the President nominated the same Scrutineers. The votes having been counted and reported to the President, he declared the result as follows, viz.:—*President*, Mr. William Carruthers; *Treasurer*, Mr. Frank Crisp; *Secretaries*, Mr. B. Daydon Jackson and Mr. W. Percy Sladen.

The President then delivered his Address (see p. 135) and paper "On the Forms of Seedlings and the Causes to which they are due." (This will appear in the Journal with appropriate illustrations.)

Prof. Mivart then moved the following resolution, viz.:—"That the thanks of the Society be given to the President for his excellent Address, and that he be requested to allow it to be printed."

This having been seconded by Prof. Moseley, and spoken to by Mr. J. G. Baker and Dr. Henry Trimen, was carried.

Afterwards Prof. Allman proposed:—"That the Fellows accord a special vote of thanks to Sir John Lubbock for his valuable services as President of the Society for the last five years, during which time, at considerable sacrifice on his part, he has given close attendance to the affairs of the Society, both in Council and at the Evening Meetings, besides himself contributing several most interesting papers, and as the Fellows generally regret his retirement, those present desire that this expression should appear on the Minutes."

This Resolution, having been seconded by Mr. Frederic Stratton, was carried.

Mr. Robert MacLachlan then moved:—"That a vote of thanks be given to our Treasurer (Mr. Crisp) and Secretaries (Mr. Jackson and Mr. Sladen) for their valuable labours during the Session."

This was seconded by Mr. George Maw, spoken to by the President, and carried.

Mr. William Wickham also proposed that a vote of thanks be

## June 3rd, 1886.

WILLIAM CARRUTHERS, F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Frederick Merryweather Burton, Esq., James Fletcher, Esq., William Saunders, Esq., George William Carter, Esq., Prof. John Macoun, Prof. Joseph Price Remington, James Rodway, Esq., Martin John Sutton, Esq., and Pridham H. Wippell, Esq., were elected Fellows.

The President nominated Mr. Frank Crisp, Mr. W. T. Thiselton Dyer, Prof. W. H. Flower, and Sir John Lubbock, Bart., to be Vice-Presidents for the ensuing year.

There were exhibited for Mr. J. G. Otto Tepper, of Adelaide, South Australia, seeds of *Xanthorrhœa Tatei* (F. von Mueller), collected by Mr. Tepper at Cape Barde, Kangaroo Island, South Australia.

Two volumes of Coloured Drawings of Plants, said to have been drawn in China about the beginning of this century, were shown for Dr. Charles Cogswell.

Mr. George Murray exhibited specimens of the Fungus *Ileodictyon cibarium*, Tul., from New Zealand, brought home by Dr. von Lendenfeld, who noted their bright luminosity. This fungus is eaten when very young, before it bursts the volva; when mature, the smell is peculiarly disgusting, and it is then never eaten.

Specimens of *Balanophora Thwaitesii*, preserved in spirit, and brought from Ceylon by Prof. F. O. Bower, F.L.S., and a growing plant of *Liparis Loeselii*, Rich., from Cambridgeshire, were shown by Dr. Henry Trimen and Mr. H. N. Ridley respectively, in illustration of their papers.

The following papers were then read:—

1. "The Mosses and Hepaticæ collected in Central Africa by the late Right Rev. James Hannington, Bishop of Mombasa, F.L.S., with some others, including those gathered by Mr. H. H. Johnston on Kilimanjaro." By W. Mitten, A.L.S.
2. "Enumeration of the Plants collected by Mr. H. H. Johnston on the Kilimanjaro Expedition, 1884." By Prof. Oliver, F.R.S., and the Officers of the Kew Herbarium.
3. "On *Balanophora Thwaitesii*." By Dr. Henry Trimen, F.L.S.
4. "A Revision of the Genus *Liparis* (Orchideæ)." By H. N. Ridley, F.L.S.
5. "Report on Dr. J. Anderson's Collection of Sponges made in 1881–82 from the Muddy Flats on the North-western side

of King's Island, on Padaw, one of the Mergui Archipelago, coast of Burmah." By H. J. Carter, F.R.S. (Communicated by Prof. J. Anderson, F.L.S.)

6. "On the Ophiuridæ of the Mergui Archipelago." By Prof. P. Martin Duncan, F.R.S., F.L.S.

7. "On some Parts of the Anatomy of *Ophiothrix variabilis* (Dunc.) and *Ophiokampsis pellucida* (Dunc.)." By Prof. P. Martin Duncan, F.R S., F.L.S.

8. "The Holothurians of Mergui." By Prof. Jeffrey Bell, M.A., Sec.R.M.S. (Communicated by Prof. John Anderson, F.R.S., F.L.S.)

9. "A Monograph of Recent Brachiopoda.—Part II." By the late Dr. Thomas Davidson, F.R.S., F.L.S.

### June 17th, 1886.

William Carruthers, F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

John Brazier, Esq., James A. Dobson, Esq., and Peter Lund Simmonds, Esq., were elected Fellows.

Photographs of *Hydnora Johannis*, a plant from Tropical Africa, were exhibited for Mr. William Fawcett.

The Botanical Secretary called attention to, and made some remarks on, specimens of malformed Daisies, shown for Mr. Robert Drane, F.L.S. These were characterized by the suppression of the ligulate florets of the ray, giving the flowers a peculiar appearance. They had been found growing in patches near Cardiff, and observed by Mr. Drane in the same spot for at least two years.

Prof. John Macoun exhibited a fine series of dried Ferns from Canada. He stated that several of these were quite local in habitat, but where found they grew in abundance.

Mr. Thos. Christy showed examples of Jamaican plants ornamentally mounted on the fibre of *Lagetta lintearia* and *Oreodoxa oleracea*.

The following papers were then read:—

1. "Synopsis of the Genera of the Chalcididæ, subfamily Eucharinæ, with Descriptions of several new Genera and Species of Chalcididæ and Tenthredinidæ." By William F. Kirby. (Communicated by Dr. J. Murie, F.L.S.)

2. "Eocene representatives of *Smilax* in Great Britain." By J. Starkie Gardner, F.L.S.

3. "List of the Lepidoptera of the Mergui Archipelago." By Frederick Moore, A.L.S.

5. "On the Anatomy of the Perignathic Girdle and of other parts of the Test of *Discoidea cylindrica*." By Prof. P. M. Duncan, F.R.S., and W. Percy Sladen, Sec. Linn. Soc.

6. "Monograph of Recent Brachiopoda.—Part III." By the late Dr. Thos. Davidson, F.R.S., F.L.S.

7. "List of Birds collected in the Mergui Archipelago." By Prof. John Anderson, F.R.S., F.L.S.

8. "The Mollusca of the Mergui Archipelago." By Prof. Eduard von Martens. (Communicated by Prof. J. Anderson, F.R.S., F.L.S.)

9. "Report on a Collection of Podophthalmatous Crustacea made in the Mergui Archipelago during the years 1881 and 1882." By Dr. J. G. De Man. (Communicated by Prof. J. Anderson, F.R.S., F.L.S.)

10. "Report on the Vegetation of Diego Garcia." By W. Botting Hemsley, A.L.S.

11. "Occurrence of *Lumpenus lampetriformis* on the North Coast of Scotland, with Notes on its habits, food, and the ground it frequents." By George Sim. (Communicated by Dr. Francis Day, F.L.S.)

## ANNIVERSARY ADDRESS OF THE PRESIDENT.

I do not know that I was ever much more surprised than when, one day about five years ago, my excellent friend Prof. Allman called on me and intimated your wish that I should become your President. Of course I was well aware that there were other naturalists with far higher claims—I need only mention, for instance, Sir Joseph Hooker and Mr. Busk, to both of whom the Society is deeply indebted, and who would have more fitly occupied this Chair. We all regret, and no one more than myself, the reason which deprived us of the pleasure of electing them.

That being impossible, I felt that, however unworthy I might be to follow the distinguished men who have preceded me, I ought not to decline. There is a story of one of the mediæval Popes, who, though a man of very moderate ability, attained the highest position in the Roman Catholic Church, much to the astonishment of all his friends. One of them once candidly expressed his surprise, and asked the Pope how he could account for it. "Well," said the Pope, "I have in life acted on three rules. I have never asked for anything; I have never refused anything that was offered me; and in whatever office I have been placed I have endeavoured to do my best." I did not think I ought to refuse, and I hope I have done my best. In accepting, I must say I was greatly influenced by the friendship which it is my privilege to enjoy with so many of our Fellows; by the knowledge that I could rely on your kind assistance, advice, and cooperation, and that you would look leniently on all my shortcomings.

And now, Gentlemen, that the term of my office has arrived, it is a matter of great satisfaction to me that, in quitting the Chair, I leave the Society in a state of great efficiency and prosperity. Never, I think, have our Meetings been more numerously attended, the exhibitions more interesting, or the papers more valuable. If we contrast our position with what it was five years ago, we shall find that, while some other Societies have fallen back, we have, on the contrary, made steady and material progress. Every year has shown a substantial addition to our numbers. This was the case even last year, when we had to deplore a number of losses by death, not only above the average in number, but, as you have heard, inflicting a loss on the Society much severer than the mere number would indicate. Still there is a steady and considerable increase. Our annual income, as contrasted with five years ago, shows an increase of over £300, a very considerable addition in proportion to the whole; we are spending £100 a year more on our Library, £100 a year more on our Publications, and yet we have invested some £400 annually. Of course this satisfactory progress is mainly due to the exertions of our Fellows, and especially of our Officers, but I may not the less congratulate myself that the Society has never, perhaps, flourished more than during the last five years.

On previous Anniversaries, Gentlemen, I have asked your attention mainly to circumstances connected with the work of the Society, and the principal events which during the year have taken place in reference to Biological Science. On the present occasion, as you are aware, it has been decided to take a different course. You will remember that I deferred at the last meeting the paper which I had hoped to read, in order that we might not lose the advantage of hearing Mr. Romanes's communication, "Physiological Selection; an Additional Suggestion on the Origin of Species," which, as he was just leaving England, he would have had no other opportunity of delivering. It was in consequence arranged that I should lay it before you on the present occasion.

The President then delivered his Address, which will appear in the Journal.

It is not usual, I am aware, to discuss a Presidential Address, and under ordinary circumstances this is no doubt a good rule. But I hope to-day may be an exception. It would be very interesting to me, and I think to many of you, to hear the views of some of the Botanists present on the suggestions which I have ventured to make, and other illustrations which will doubtless have occurred to them.

Before I sit down, however, on this the last occasion on which I shall have the honour of addressing you as your President, allow me to thank you, Gentlemen, for the kindness, the courtesy, and the support which I have received from every one of you during my term of office, and especially the Council and

Officers for their valuable assistance, and to assure you that I shall always look back with pride to the period during which I have occupied this chair—one of the greatest honours which any Biologist can receive.

## OBITUARIES.

**RANDAL HIBBERT ALCOCK** was born at Gatley, Cheshire, July 21, 1833, but lived during the greater part of his life at Bury in Lancashire, where he was a cotton-spinner. Taking a great interest in Botany, he was mainly instrumental in establishing the Bury Natural History Society, of which he was President until his retirement from business; he also drew up a list of local plants, which was printed in the report of that Society for 1871.

He was naturally brought into close contact with the working men botanists of Lancashire and Cheshire, and for their use he compiled his 'Botanical Names for English Readers,' an 8vo volume, in 1876. In 1882 he left business and removed to Didsbury, where he died of congestion of the lungs rather suddenly on Nov. 9, 1885.

He is described as a man of quiet and retiring disposition, of much general information, a good letter-writer and contributor to the local press. A MS. 'Flora of Virgil,' which he had worked upon for some years previous to his death, is so nearly complete that it may possibly be published. He was elected a Fellow of our Society December 7, 1876.

**EDMOND BOISSIER** came of an old Protestant family which removed to Geneva from France on the revocation of the Edict of Nantes; he was born in that town May 25, 1810, and brought up there, the summers being spent at his father's place at Valeyres. His sister next in age is the Comtesse de Gasparin.

When he had to choose a profession, he chose to study botany; so, after careful preparation, he undertook a journey into Spain in 1837, exploring Grenada and the Eastern Pyrenees; and in 1839–41 brought out his two sumptuous quarto volumes 'Voyage botanique dans le midi de l'Espagne.' In 1842 he married his cousin, Lucile de la Rive, and with his wife travelled in Greece, Anatolia, Syria, and Egypt. To her he dedicated two of their joint discoveries, *Omphalodes Luciliæ* and *Chionodoxa Luciliæ*. In 1849 he experienced the great sorrow of his life by her death of typhoid fever during a second journey in Spain. From 1842 to 1854 he brought out his 'Diagnoses,' first series, in two vols., and a second series in 1855; his Monograph of *Plumbagineæ* was done in 1848; in 1862 he contributed a Monograph of *Euphorbia* to DC. Prodromus, vol. xvii., the rest of the order being worked up by Dr. Mueller of Aargau. Four years later, 1866, he produced his 'Icones Euphorbiarum.' He paid an eighth visit to Spain in 1881, but then in shattered health. His great work, the 'Flora Orientalis,' was completed in five thick 8vo volumes; its range extends over parts of Greece and Turkey, Crimea, Lower Egypt, Asia Minor, Armenia, parts of Turkestan, Persia, Afghanistan, and the borders of India. Its issue extended from 1867–84. The author was at work on a supplementary volume when death stepped in. He was elected Foreign Member May 5, 1860.

It was a noble life shadowed by an early loss, and in later years worn by pain—the manly life of one who lived simply and wrought industriously where many others, with his independent fortune, would have lived idly and luxuriously. He was also a loyal and public-spirited citizen, taking his share of personal service for the State. He was a man of fine presence, and of much bodily vigour till past middle life. His botanical work was confined to systematic work only, with perhaps a faculty for over-discrimination. No one living knew the Eastern plants so well or could describe them better; and his herbarium is rich in his types.

He died at his ancestral home, Valeyres, Sept. 25, 1885.

George Dransfield Brown was born about the year 1828, and died at Ealing July 17, 1885. Educated for the medical profession, he studied at St. Thomas's Hospital with distinction, and was prizeman of his year. He was afterwards established in practice in Ealing. He devoted much attention to natural history, taking special interest in cryptogamic botany and in British Polyzoa, recent and fossil. He was a Member of the Royal College of Surgeons, F.R.M.S., and was elected a Fellow of this Society in 1876.

By the death of Dr. William Benjamin Carpenter on November 10, 1885, this Society lost one of its most distinguished Fellows, whose name will stand prominent in the records of research as a pioneer of the present age of science, and will occupy an unchallenged place amongst the foremost thinkers of our time. He was the eldest son of Dr. Lant Carpenter, an eminent Unitarian divine. Born in Exeter, October 29, 1813, William Benjamin Carpenter was educated under his father's care, and afterwards entered the Bristol School of Medicine, from which he passed to University College, London. He then proceeded to the University of Edinburgh, and graduated there as M.D. in 1839. He commenced practice in Bristol, holding at the same time lectureships on Medical Jurisprudence and Animal and Vegetable Physiology; but in the course of a few years he resolved to devote himself to the scientific rather than the practical side of his profession, and with that intention removed to London in 1845. Here he held the appointments of Fullerian Professor of Physiology in the Royal Institution, Lecturer on Physiology at the Medical School of the London Hospital; afterwards Examiner in Physiology and Comparative Anatomy in the University of London, and Professor of Medical Jurisprudence in University College. He was appointed Registrar of the University of London in 1856; and during the twenty-three years he held that office contributed largely to the great extension of the work of the University.

As an investigator and philosophical naturalist, Dr. Carpenter's imperishable claim to be remembered lies in his important contributions to the science of Physiology, a science which he was one of the first to place on a true foundation, by marshalling, in one well-ordered scheme, the previously isolated facts that represented our knowledge of organic structure and function, wherein lay the germ of that wider view of the science of life which to-day is known by the name of Biology.

His graduation thesis in 1839, on "The Physiological Inferences to be Deduced from the Structure of the Nervous System of Invertebrated Animals," was a remarkable production, and already indicated the bent of his mind. This was followed in the same year by his first great work, 'The Principles of General and Comparative Physiology,' which was succeeded by 'The Principles of Human Physiology,' and later by 'The Principles of Mental Physiology,'—a series of works which, alone sufficient to establish their author's position amongst the leaders of science, will stand as a lasting memorial of his profound knowledge of nature, and philosophical grasp of detail.

In addition to the above must be mentioned his well-known work on 'The Microscope,' which has probably contributed more than any other to the popular understanding and advancement of that important adjunct to research.

In the midst of arduous professional and editorial duties, Dr. Carpenter found time to carry on important special investigations. Amongst these his memoirs on the Foraminifera, on the structure of the Molluscan shell, on the structure and development of *Comatula*, and on *Eozoön canadense*—a subject with which his name will always be associated—may be mentioned as the most prominent. His attainments, however, were so varied and his knowledge so many-sided, that it is impossible in the brief space of an obituary notice to indicate even the subjects which his busy pen has contributed to the advancement of human knowledge.

Another service rendered to Science—the importance of which it is impossible to overestimate—was the active part he took in promoting the exploration of the deep sea. Indeed it was mainly through his influence and energetic advocacy that systematic investigations of that kind were first undertaken by the Government of this country—an initiative that has been followed by numerous foreign States, and has borne such remarkable fruits in the increase of our knowledge of the forms of animal life, and of the physical conditions of the ocean. In the earlier of these Expeditions—the 'Lightning' and the 'Porcupine'—Dr. Carpenter himself took a personal share, and the results attained by these investigations led to the fitting-out of the now world-renowned 'Challenger' Expedition. In connection with each of these Expeditions, Dr. Carpenter has published valuable memoirs on the temperature and currents of the deep sea, and on the causes to which their origin was due.

Dr. Carpenter was elected into the Royal Society in 1844, and more than once served as Vice-President. He was the recipient of one of the Royal Medals in 1861, and of the Lyell Medal of the Geological Society—of which Society he was also a Fellow—in 1883. He was President of the Microscopical Society in 1854–55, and of the British Association at the Brighton Meeting in 1872. In 1871 the University of Edinburgh conferred on him the degree of LL.D.; and in 1872 he was created a C.B., in recognition of the services he had rendered to the University of London. He was a Corresponding Member of the Institute of France and of the American Philosophical Society; and an Honorary Fellow of the Royal Medical and Chirurgical Society, and of the Cambridge Philosophical Society. He became a Fellow of this Society in 1856.

Apart from his services to Science, it may be truly said that, as a genial and ever-ready friend, as a philosopher, and as a philanthropist, in the highest sense of the word, the memory of Dr. Carpenter will long be cherished.

**Dr. Thomas Spencer Cobbold**, who was born in 1828, was the son of the Rev. Richard Cobbold, of Wortham, in Suffolk. He was educated at Charterhouse, and commenced his medical career under Mr. Crosse, the eminent surgeon of Norwich. He matriculated at Edinburgh in 1847, and showing great ability in dissecting and the making of preparations, was appointed by Prof. Goodsir as his prosector, by whom also he was induced to devote himself to morphological work in preference to practical medicine. He was gold-medallist in 1851; and, shortly after he had graduated, was appointed Curator of the University Anatomical Museum, in which capacity he lectured on comparative osteology, and worked energetically to improve the collections under his charge. He was also led, whilst in Edinburgh, to devote much attention to the study of geology, through his intimacy with Edward Forbes, with whom he was a frequent companion on his various excursions. In 1856 Dr. Cobbold removed to London.

He has held the appointments of Professor of Botany and Helminthology at the Royal Veterinary College, the Swiney Professorship of Geology, Lecturer at the Middlesex Hospital, and Examiner in Comparative Anatomy, Zoology, and Botany at the National Science School, St. Mary's Hospital.

The subject with which Dr. Cobbold's name is most closely associated, and on which he was unquestionably the foremost English authority, is Animal Parasites. His researches on the anatomy, development, and life-history of the Entozoa are a worthy memorial of patient and accurate labour, and will long published elsewhere. His first paper to this Society was read Dec. 1857, his last only a fortnight before his death.

He was a Fellow of the Royal Society, and a Corresponding Member of the American Philosophical Society and of the Royal Academy of Turin. He was elected a Fellow of this Society in 1857.

Dr. Cobbold had been in delicate health for some time, and died suddenly on March 20th, 1886.

**Lieut.-Col. Alfred Augustus Davidson** entered the Madras Army on 1st April, 1854, and served with the 4th Madras Native Infantry; in 1862 he entered the Staff Corps, and was for some time attached to the Nair Brigade in Travancore, in the mountains of which State he acquired a taste for Botany. He had not good health, and had to come to England on sick-leave several times; in 1882 he returned to India from sick-leave of 20 months, but he only remained in India a year and a half, when he retired from the Service, and died in June last, after attending a rehearsal of the Handel Festival at the Crystal Palace, as an amateur violinist. He was elected Fellow, February 3, 1881.

**Thomas Davidson** was born in Edinburgh, May 17, 1817, and died at his residence in Brighton on October 14, 1885. He was educated entirely on the continent, and showing at eleven years of age a decided taste for natural science and for art, was sent to Paris to prosecute his studies in those directions. He attended the lectures at the Sorbonne, Jardin des Plantes, École des Mines, and Collége de France; and worked in the studios of several of the most eminent French artists of that day. Having attached himself specially to the study of geology and palæontology, he acquired, under the guidance of Prevost a practical knowledge of the stratigraphy and fossils of the Paris Basin. He then returned to this country for a short time, matriculated at Edinburgh in 1835, and had the opportunity of assisting Mr. R. Cunningham in his geological survey of the Lothians. In 1836 he revisited the continent, and made a personal examination of the geological features of a considerable portion of France, Belgium, Switzerland, Germany, and Italy.

In the course of this tour, he became acquainted with the eminent geologist Von Buch, by whom he was induced to take up the special study of the Brachiopoda—a group at that time comparatively little known. From that year (1837) up to the time of his death, he devoted himself heart and soul to the work then undertaken, with a loyalty, an energy, and a devotion rarely equalled. His noble series of monographs on the Fossil Brachiopoda published by the Palæontographical Society,—occupying five large quarto volumes, containing nearly 3000 pages of text, and 250 plates—are a testimony to his industry and patient research. They are also a memorial of his great artistic talent, for the whole of the magnificent illustrations were drawn on stone by his own hand.

In addition to these monographs published by the Palæontographical Society, Dr. Davidson contributed numerous memoirs to various British and continental Societies and scientific journals; his work comprising the whole group of the Brachiopoda, recent as well as fossil. The Report on the series of Brachiopoda collected by the 'Challenger' Expedition was written by him; and his last work, the material for which he had been accumulating for many years, which was completed only a few short weeks before his death, was a comprehensive and fully illustrated monograph on the species of recent Brachiopoda. This was contributed to our Society, and will shortly be published in the 'Transactions.'

Dr. Davidson was a member or honorary member of a large number of the learned Societies of Europe and America. He was elected a Fellow of the Royal Society in 1857, and received one of the Royal Medals in 1870, in recognition of his valuable contributions to palæontology. In 1865, the Geological Society awarded him the Wollaston Medal; and in 1882 the University of St. Andrews conferred upon him the honorary degree of LL.D. He became a Fellow of this Society in 1878.

Dr. Davidson has bequeathed to the nation his magnificent and unique collection of recent and fossil Brachiopoda, together with his valuable collection of books and original drawings; and he has left a name that will be held in honour so long as the work of to-day has a claim on human thought.

THOMAS EDWARD, the well-known Banff naturalist, died last month (April 1886), in his 72nd year. He deservedly obtained a high reputation as a shrewd and accurate observer of nature, and as a most industrious and careful collector. Following the poorly paid calling of a journeyman shoemaker in a small Scotch town, his whole life was a struggle against poverty and hardship, and the difficulties that beset the pursuit of knowledge without means and without the necessary education. With Edward, however, the love for all things animate was inborn, and his craving to rob Nature of her secrets was insatiable. Notwithstanding his many disadvantages he was able to add greatly to the knowledge of the fauna, marine as well as terrestrial, of his native district, and made a great number of valuable collections. Many specialists have acknowledged their indebtedness to him for specimens sent and new species obtained. Edward himself has also contributed the description of a number of his observations to various scientific publications, and some have appeared in the Journal of this Society.

The story of his life has been eloquently told by Dr. Samuel Smiles; and as an appendix to that work is a list of the Vertebrata and Crustacea collected by Edward in Banffshire, which alone occupies 47 pages.

He was elected an Associate of this Society in 1866, and for some time he held the post of Curator of the Banff Museum.

During the latter years of his life he had not been able to do much, in consequence of failing health; but circumstances were easier for him, a pension of £50 a year having been granted him by the Queen, besides other pecuniary presentations.

There are few naturalists acquainted with his name and his work, from whose lips, as an expression of admiration and respect, have not escaped the words "Poor Thomas Edward!"

**Rev. James Hannington**, D.D., Bishop of East Equatorial Africa, was born at Brighton, the son of Mr. Samuel Hannington of that town and Hurstpierpoint.

He was educated at St. Mary Hall, Oxford, taking his B.A. degree in 1873 and M.A. in 1875, in which year he became curate of St. George's, Hurstpierpoint, remaining there till 1882, when he was appointed by the Church Missionary Society to represent them in Nyanza, East Central Africa. He led his party across that continent, but when he reached Lake Victoria Nyanza he was so spent with fever and other climatic diseases that he was obliged to retrace his steps and come home, where his health was soon reestablished.

In 1884 the diocese of East Equatorial Africa was founded, and Dr. Hannington consecrated the first bishop. He returned to Africa by way of Palestine and Upper Egypt, reaching Mombasa in January 1885, thence starting to reach the Victoria Nyanza Mission Stations. By the end of October he had got to within three days of Uganda, the town of Mwanga, successor of Mtesa, who thought his kingdom was threatened by the approach of an English party. He was taken prisoner by the king's order, and after being kept in confinement eight days was, with nearly all his followers, murdered on October 30th, 1885. Four porters only escaped, who brought the sad tale to Mombasa.

The late Bishop was elected Fellow, Dec. 6, 1883. His old friend Mr. Mitten, who worked up the last packet of mosses sent from Africa by the deceased, has recorded his ardent love of plants, shown in the Alps and at home. His name is associated with an *Asplenium*, *A. Hanningtoni*, Baker, and a Passion-flower, *Tryphostemma Hanningtonianum*, Mast.

**Rev. Henry Hawkes** was born at Dukinfield, 1st Feb. 1805, his father, the Rev. J. Hawkes, being the Unitarian minister in that town. Having passed three years at Glasgow University, he removed to York, where he passed another period of three years in study. Early in 1833 he removed to Portsmouth, and for 38 years was the Unitarian minister there; altogether living 52 years in that borough. His favourite pursuit was Botany, and he was elected Fellow of this Society so far back as 1842; but he devoted much of his time to helping, as lecturer or President, the local Philosophical Society, the Athenæum, the Hampshire Library, the Watt Institute, and the Royal Portsmouth Hospital.

He never married, and having no relatives in the south, feeling advancing age, he, in 1871, retired from active pastoral work, until August 1885, when he left Portsmouth and removed to Liverpool, having previously given his library of more than two thousand volumes to the borough. His portrait was painted by a Portsmouth artist, presented to the Corporation, January 12th last, and ordered to be hung in the Public Library. Mr. Hawkes died a little more than a fortnight after this, namely, Jan. 29, 1886.

**Henri Milne-Edwards**, the son of Lieut.-Col. William Edwards by his marriage with Elizabeth Vaux, the descendant of an old English family, was born at Bruges, October 23, 1800. He received his early education in Belgium, and subsequently studied Medicine in Paris, where he took his diploma in 1823. Inspired with a love for natural history from his boyhood, he soon abandoned the medical profession, and devoted himself to the investigation of the lower forms of animal life.

Estimating with rare sagacity from the first the importance of the alliance that ought to exist between anatomy and physiology, Milne-Edwards was not content with merely studying the structure of dead organisms, but realized the necessity of carrying out most careful researches into the habits, distribution, and development of the living animals. It was this foresight, elaborated in later years into a guiding principle, which is, perhaps, the key-note of Milne-Edwards's eminence, and upon which his claim to be ranked as one of the foremost naturalists of the early part of the present century may probably be most justly based.

Associated at first with Victor Audouin, he commenced in 1826 his zoological explorations on the coast of France, which were continued in subsequent years, and extended to Nice, Naples, Algiers, and later to Sicily, the last-named expedition being accompanied by MM. de Quatrefages and Blanchard.

As an outcome of these earliest researches, the foreshadowing of a theory of the bathymetrical distribution of marine life was formulated, which may be regarded as the foundation of those laws of marine life which in later times have received so large a share of attention, and have borne so rich a harvest of results.

It is not surprising that the problems presented by the study of what might at that day be regarded as a new field of natural-history investigation should have appealed irresistibly for solution to a mind of such extensive scope and such far-penetrating vision as Milne-Edwards's; and history will record that his contributions to the philosophy of living organisms are alike numerous and important. His theories of the division of functional labour, of centres of creation, and on the causes of the variety of animal life, may be mentioned as amongst the most remarkable. His publications, embracing nearly all branches of zoology, form a long list, upwards of 150 (about one third with colleagues) being enumerated in the Catalogue of the Royal Society. Of these, it is the highest praise to say that many rank as classical works.

His 'Histoire naturelle des Crustacés,' the 'Introduction à la Zoologie générale,' and the 'Leçons sur la Physiologie et l'Anatomie comparées de l'homme et des animaux,' are alone an imperishable monument to his industry, genius, and penetration.

In 1832 Milne-Edwards was appointed to the Professorship of Natural History in the Collége Henri IV., and at the École centrale des Arts et Manufactures. In 1841 he succeeded Victor Audouin in the Chair of Entomology at the Muséum d'Histoire naturelle. On the death of Geoffroy Saint-Hilaire in 1844 he was elected to the Chair of Zoology at the Sorbonne, and became Dean of the Faculté des Sciences in 1849. In 1861 he exchanged the chair of Entomology at the Jardin des Plantes for that of Mammalogy, and was shortly afterwards appointed Assistant-Director of the Museum.

He was elected member of the Academy of Sciences in 1838, and was a member of most of the learned Societies and Academies of Europe and America. In 1856 the Royal Society awarded him the Copley Medal; and he was elected a Foreign Member of this Society in 1839. He was a Grand-Officer of the Legion of Honour, and had likewise been decorated with a number of foreign orders.

Milne-Edwards died in Paris on the 29th of July last, in his 85th year. By his death the Society loses its oldest and one of its most eminent Foreign Members.

**Rev. William Williamson Newbould** was born at Sheffield, Jan. 20, 1819; after his schooldays he proceeded to Cambridge, from which time some of his earliest friendships date. Whilst an undergraduate he was with Prof. Henslow and a party on an excursion, and asked the Professor a question as to a certain genus (*Cerastium*) which had been recently reviewed by Mr. Babington. "You had better refer to the author himself," said Henslow; "there he is," pointing him out, to Newbould's consternation. The friendship thus begun lasted nearly half a century, as testified by the tribute the survivor has paid the deceased in the May Number of the 'Journal of Botany.'

Although he was entered on the books of Trinity, he never occupied rooms in the college-buildings, but he once pointed out to the writer the lodgings he lived in opposite the gates. He took his B.A. in 1842, and having taken orders, he was appointed curate at Bluntisham, in Huntingdonshire. The next year witnessed the publication of Babington's 'Manual,' an early copy of which was sent by coach to Newbould, who sat up through the night till four in the morning, deep in its perusal. It may be imagined how great an attraction this novel account of the native flora must have been to one who was unsatisfied with the current floras, which took their tone from Smith. With the exception of S. F. Gray's 'Natural Arrangement' in 1821, and Lindley's meagre 'Synopsis,' the student had to content himself with manuals on the Linnean System, which had been handed down from a previous generation, without much effort to correlate British forms with continental, or to keep touch with foreign workers.

Babington's 'Manual' is now in its eighth edition, and the influence of the successive editions on field-botany during the last 43 years can hardly be measured; we are living in a generation nourished by a different atmosphere.

In 1845 Newbould proceeded M.A., and, after his marriage at Comberton with the niece of his Rector, he lived in or near London the rest of his life, with short exceptions. The various notices which have seen the light in botanical journals have testified amply to the strong and unique individuality of the man, who was so staunch a worker for others, and yet has left so little to record of himself.

There is scarcely a local flora during thirty years past which does not owe much to his knowledge and industry; and of yet unpublished works he has contributed to Hanbury's 'Kent,' Pryor's 'Hertfordshire,' Hillhouse's 'Bedfordshire,' Warren's 'Cheshire,' and Beeby's 'New Flora of Surrey.'

The last four years of his life he lived at Montagu House, Kew. In January last he was accidentally knocked down by a cab, and although he seemed little the worse for it at the time, some internal injury took place, as he complained of pain some weeks afterwards. Shortly after he renewed a cold, and, refusing to take any care of himself whilst unwell, he exposed himself to a fresh chill, which turned to acute pneumonia; from this he appeared to be recovering, when weakness of the heart's action set in, and he died on April 16th, after three weeks' illness, leaving a widow, and a grown-up family of five sons and a daughter. He was buried, 20th April, 1886, at Fulham Cemetery.

He was elected Fellow, June 15, 1863.

CHARLES WILLIAM PEACH was born at Wansford in Northamptonshire, September 30, 1800. At the age of 24 he was appointed to the Revenue Coast Guard, and occupied various stations on the south and east coasts of England, his longest sojourn being at Mevagissey in Cornwall, where he remained eleven years. In 1845 he was transferred to the Customs, and during the last twelve years of his service was stationed in the north of Scotland, first at Peterhead, and afterwards at Wick. He retired from the Customs on a pension in 1861, and spent the remainder of his life in Edinburgh, where he died, February 28, 1886.

Whilst stationed in the south of England he acquired an intimate knowledge of the marine fauna of that coast, and also devoted much attention to Geology. One of his most important discoveries was that of the presence of fossils of Lower Silurian age in rocks in Cornwall that had previously been considered to be Azoic—a discovery that may be said to have furnished Sir Henry de la Beche with a basis for mapping the rocks of the south-west of England. It was in like manner Peach's good fortune, whilst stationed in the north, to discover at Durness fossils that were the key to the geological age of the rocks of the Highlands.

A number of papers were communicated by Mr. Peach to the British Association, the 'Annals and Magazine of Natural History,' and to the publications of the three well-known County Societies of Cornwall. Although he wrote comparatively little himself, he was always ready to place his knowledge and collections at the disposal of specialists; and in this way furnished a large amount of valuable material and information to many eminent zoologists and palæontologists, whose cordial acknowledgments are a lasting testimony to his zealous work and the service he rendered to science.

He was elected an Associate of this Society in 1868. In 1859 the Council of the Geological Society awarded him the Wollaston Fund in recognition of his discoveries in the rocks of Devonshire and Cornwall; and in 1875 the Royal Society of Edinburgh gave him the Neill Medal, for his services in the cause of Natural History.

**JOHANN AUGUST CHRISTIAN ROEPER** was born in Germany, some time in 1800; his first published work, on German *Euphorbiæ*, is dated 1824, thus, as a *botanical* author, being senior to Mr. Bentham by two years. In 1828 he was Director of the Botanic Garden at Basel, and published his classical paper, "De Organis Plantarum;" his contribution to Seringe's 'Mélanges Botaniques,' on the Flower and Inflorescence, first put the matter on a scientific basis, and established the present nomenclature. At that town he was Professor in 1830, the date of his work on 'Balsamineæ.' Some time before 1840 he was transferred to Rostock, where he remained professor for more than 40 years, without fulfilling the promise of his youth by any adequate scientific work; his latest productions seem to have been published in 1859. He was elected Foreign Member, May 6, 1852, and died at Rostock, March 17, 1884.

**LOUIS RÉNÉ TULASNE** was born at Azay-le-Rideau (Indre-et-Loire), Sept. 12, 1815, received a classical education, and was intended for the Bar; but he felt that he lacked the readiness for public speaking which was indispensable to his success as a barrister, whilst a strong inclination towards biology drew him in another direction. He studied botany under A. St.-Hilaire, who named him as his colleague in his work on the Brazilian flora, which did not see the light.

In 1842 he entered the Muséum d'Histoire Naturelle as Assistant, under Brongniart; and then he began his researches on the reproduction of Fungi, which so much contributed to the existent knowledge of these forms. He published his researches on Uredineæ in 1847, the Ustilagineæ in 1854, the Tremellineæ in 1853, the reproductive organs in Mushrooms, Ergot, Hypogæous Fungi, with 21 plates, winding up with his masterpiece, 'Selecta Fungorum Carpologia,' in 3 vols., fol., 1861–65.

The close relationship between Fungi and Lichens was recognized by Tulasne before Schwendener, and published in 1852.

Besides these publications, he worked at phanerogamic botany, issuing memoirs on the collections under his care, on Leguminosæ, the Flora of Colombia, Madagascar, on the Monimiaceæ, the American Gnetaceæ, and the singular group of Podostemaceæ. In addition to these taxonomic works, he published two papers on Studies in Embryology.

For twenty years the delicacy of his health compelled him to leave Paris, and reside on his property at Hyères, where he died of apoplexy, Dec. 22, 1885; his brother having died the year before.

He was elected Foreign Member May 3, 1853, followed by his election to the 'Institut,' Jan. 9, 1854, in the room of Adrien de Jussieu.

H. H. **RAMA VARMA**, Maharajah of Travancore, was born on the 19th May, 1837. His mother dying when he was only eight weeks old, he was brought up by his great aunt; from the first he was of a delicate constitution, which he did not outgrow. His early education was carefully conducted by his father, the Coil Thampuran of Tiruvallah. In 1844 he fell seriously ill, and was pronounced consumptive; but by skilful treatment he recovered his health. In 1849 the present Rajah Sir T. Madara Row, a distinguished pupil of the Government High School at Madras, was appointed tutor to the young Prince, which post was held for four years. The subject of our notice became an earnest student of literature, and contributed many articles to the Indian Press, especially the 'Madras Athenæum' and 'Calcutta Review.'

Prince Rama Varma travelled much in Travancore, and took copious notes of the things which struck him. He afterwards visited Madras twice, the last time in 1866. He corresponded and exchanged plants with Kew, Drs. Anderson and King, of Calcutta, Bennet of Australia, and Thwaites of Ceylon. During the period of twenty years after the death of his uncle in 1860, when he became heir-apparent, he devoted the greater portion of his time and energy to acquiring a familiarity with the wants and conditions of his people, which he afterwards turned to signal account on becoming the ruler of Travancore. This happened on the death of his elder brother in May 1880. Shortly after he paid a visit to the Viceroy at Calcutta, and was created Grand Commander of the Star of India. For five years he was unremitting in his endeavours to elevate and benefit his subjects by many enlightened projects. In the middle of 1885 his health gave way; and he quietly passed away on the evening of Tuesday, 4th August, 1885.

He was elected Fellow of the Society December 6, 1883.

## DONATIONS TO LIBRARY, 1885–86.

### Volumes and more important pamphlets, exclusive of exchanges, chiefly from private individuals.

Agardh, J. G. Till Algernes Systematik Nya bidrag. vi., vii. 4to. Lund. **Author.**

Agassiz, L., and A. Gould. Outlines of Comparative Physiology. 8vo. Lond., 1851. **F. Crisp.**

Aitken, Prof. W. The Doctrine of Evolution in its Application to Pathology. 8vo. Glasgow, 1886. **Author.**

Ami, H. M. Additional notes on the Geology and Palæontology of Ottawa and vicinity. 8vo. Ottawa, 1886. **Author.**

Anderson, Prof. R. J. (1) Some considerations respecting Limbs. 8vo. Galway ?, 1884 ?—(2) The Relative Lengths of the Segments of the Limbs in Mammals. 8vo. Galway ?, 1884 ? **Author.**

Anderson, Richard. Lightning Conductors, their History, Nature, and Mode of Application. 8vo., Lond., 1885. **Author.**

Annals and Magazine of Natural History. 5th ser. Vols. xv., xvi. 8vo. Lond., 1886. **Dr. W. Francis.**

Arnold, Dr. F. Die Lichenen des fränkischen Jura. 8vo. Regensburg, 1885. **Author.**

Athenæum. Parts, July 1885 to June 1886. 4to. Lond., 1886. **Editor.**

Atkinson, E. T. Notes on Indian Rhynchota. 8vo. Calcutta, 1885. **Author.**

Baker, J. G. Synopsis of the Genus *Selaginella*. 8vo. Lond., 1883. **Author.**

Balfour (the late Francis Maitland). The Works of. Edited by M. Foster and Adam Sedgwick. Lond., 1885. **Executors.**

Beale, T. Natural History of the Sperm-Whale. 8vo. Lond. **Dr. J. Murie.**

Beccari, Odoardo. Malesia. Vol. ii. fasc. 3. 4to. Genova, 1885. **Author.**

Beeby, W. H. On *Sparganium neglectum*. 8vo. Lond., 1885. **Author.**

Begouën, Baron Henri. La Vibration Vitale. 8vo. Tours, 1885. **Author.**

Bennett, A. W. Freshwater Algæ of the English Lake District; with Descriptions of twelve new species. 8vo. Lond., 1886. **Author.**

Berger, A. M. Calendarium Floræ, Eller Blomster-Almanach. 4to. Stockholm, 1757. **E. Ährling.**

Berjeau, P. C. Varieties of Dogs. 4to. Lond., 1863. **Dr. J. Murie.**

Bibliotheca Historico-Naturalis, Physico-Chemica et Mathematica, 1867–1883. 8vo. Göttingen, 1867–83. **F. Crisp.**

Bidie, G. Report of Govt. Central Museum for 1884–85. Fol. Madras, 1885. **Author.**

Blanford, H. F. (1) Age and Correlation of the Plant-bearing Series of India, and former Existence of Indo-oceanic Continent. 8vo. Lond., 1875.—(2) Physical Geography of the Great Indian Desert, with especial reference to the former existence of the Sea in the Indus Valley. 8vo. Calcutta, 1876. —(3) The African Element in the Fauna of India. 8vo. Lond., 1876. **Prof. P. M. Duncan.**

Blanford, W. T. Scientific Results of the Second Yarkand Mission. Mammalia. Fol. Calcutta, 1879. **Author.**

Blomefield, Rev. L. (1) Notice of a Second Capture of the rare Longicorn, taken near Bath, in Sept. 1883. 8vo. Bath.—(2) Reminiscences of William Yarrell. 8vo. Bath, 1885. **Author.**

Bolus, H. Sketch of the Flora of South Africa. 8vo. Cape Town, 1886. **Author.**

Bornet, E. Algues de Madagascar récoltées par M. Ch. Thiébaut. 8vo. Paris, 1885. **Author.**

Borre, A. Preudhomme de. (1) Analyse de deux travaux récents de MM. Scudder et Ch. Brongniart sur les Articulés fossiles. 8vo. Bruxelles, 1885.—(2) Note sur les Crustacés Isopodes de la Belgique. 8vo. Gand, 1886. **Sir J. Lubbock.**

Boulenger, G. A. Catalogue of the Lizards in the British Museum. Vols. i., ii. 8vo. Lond., 1885. **Trustees Brit. Mus.**

Brazier, J. Synonymy and Remarks upon Specific Names and Authorities of Four Species of Australian Marine Shells, originally described by Dr. J. E. Gray in 1825 and 1827. 8vo. Sydney, 1885. **Author.**

Brongniart, C. (1) Observations sur le *Phylloxera*. 4to. Paris, 1881.—(2) Les Insectes Fossiles des Terrains Primaires. 8vo. Rouen, 1885.—(3) Translation of same by Mark Stirrup. 8vo. Salford, 1885. **C. Brongniart.**

Brook, G. (1) Note on some of the Specimens sent in by the Officers of the Board. (Reprinted from the Third Annual Report of the Fishery Board of Scotland.) 8vo. Edinburgh.—(2) On the Development of the Herring. Part i. 8vo. Edinb.—(3) The Spawning Period of the British Food-Fishes. 8vo. Edinb., 1885. **Author.**

Burdon-Sanderson, J., and F. J. M. Page. Electrical Phenomena of Excitatory Process in Hearts of Frog and Tortoise. 8vo. Lond. **G. J. Romanes.**

Burmeister, Dr. H. (1) Atlas de la Description Physique de la République Argentine. Fol. Buenos Aires, 1879.—(2) Sect. Mammifères—Die Bartenwale and Suppl., 1881-83; and (3) Die Seehunde der Argentinischen Küsten. Fol. Buenos Aires, 1883. **Author.**

Burrill, T. J. Parasitic Fungi of Illinois. Pt. 1. 8vo. 1885. **Author.**

Cambridge, O. P. Scientific Results of the Second Yarkand Mission. Araneidea. Fol. Calcutta, 1885. **India Office.**

Cheltenham Natural Science Soc. Proceedings, 1884-85. 8vo. Cheltenham. **Dr. F. Day.**

Cleghorn, H. Address delivered at Twenty-first Annual Meeting of Scottish Arboricultural Society. 8vo. Edinb., 1875. **Author.**

Code of Instructions for the Conduct of Office Business and for the Regulation of Accounts in the Forest Department: with Forms. 8vo. Calcutta, 1886. **Govt. of India.**

Cooke, M. C. Some Remarkable Moulds. 8vo. Lond., 1885. **Author.**

Croll, J. The Ice of Greenland and the Antarctic Continent not due to Elevation of the Land. 8vo. Lond., 1883. **Dr. W. Francis.**

Dalla-Torre, Prof. K. W. von. Tourist's Guide to the Flora of the Alps. Transl. and ed. by Alf. W. Bennett. 12mo. Lond., 1886. **Translator.**

Dallas, J. On the Primary Divisions and Geographical Distribution of Mankind. 8vo. Lond., 1886. **Author.**

Davidson, T. On a living spinose *Rhynchonella* from Japan. 8vo. Lond., 1886. **Mrs. Davidson.**

Descourtilz, E. Voyages d'un Naturaliste, et les Observations. Tomes i.-iii. 8vo. Paris, 1809. **B. Daydon Jackson.**

Dulau & Co. Catalogue of Zoological and Anthropological Books. 8vo. Lond., 1886. **Publishers.**

Duncan, Prof. P. M. (1) Answer to 'Observations on Some Imperfectly known Madreporaria from the Cretaceous Formation of England, by R. F Tomes.' 8vo. Lond., 1886.—(2) Structure of the Ambulacra of some Fossil Genera and Species of Regular Echinoidea. 8vo. Lond., 1885. **Author.**

Eichwald, E. von. Nordenskiöld und Nordmann, nach ihrem Leben und Wirken. 8vo. St. Petersburg, 1870. **Dr. J. Murie.**

Ekman, G. Hydrografiska Undersökningar vid Bohuskusten. 4to. Göteborg, 1880. **H. R. Mill.**

Entomologist. Vol. xviii. 8vo. Lond., 1885. **T. P. Newman.**

Entomologist's Monthly Magazine. Vol. xxii. 8vo. Lond., 1885-86. **Editors.**

Ernst, Prof. A. Biologische Beobachtungen an *Eriodendron anfractuosum*, DC. 8vo. Berlin, 1885. **Author.**

Essex Field Club. (1) Transactions. Vol. iv. pt. 1.—(2) Journal of Proceedings. Vol. iv. pt. 1. 8vo. Buckhurst Hill, 1885. **Club.**

Fatio, Dr. V. Les Corégones de la Suisse. 8vo. Genève, 1885. **Author.**

Feilden, H. W. The Post-Tertiary Beds of Grinnell Land and North Greenland; and Note by J. Gwyn Jeffreys. 8vo. Lond., 1877. **Howell Jeffreys.**

Fitzgerald, R. D. Australian Orchids. Vol. ii. pts. 1, 2. Fol. Sydney, 1885. **Author.**

Flower, W. H. List, Casts of Fossils Reproduced from Specimens in Depart. of Geology, British Museum. 8vo. Lond., 1885. **H. Walker.**

Ford, C. *Cassia lignea* (*Cinnamomum Cassia*, Blume). Fol. Hongkong, 1882. **Author.**

Forrest, the Hon. J. Notes on Western Australia. **Author.**

Friedländer, J. R. Naturæ Novitates. 1886, Nos. 1–18. 8vo. Berlin, 1886. **Author.**

Garden. Vols. xxviii., xxix. 4to. Lond., 1885–86. **W. Robinson.**

Gardener's Chronicle. Vols. xxiv., xxv. Fol. Lond., 1885–86. **Editor.**

Gardner, J. Starkie. (1) On Relative Ages of American and English Cretaceous and Eocene Series. 8vo. Lond., 1884.—(2) The Age of the Basalts of the North-east Atlantic. 8vo. Belfast. **Author.**

Gaskell, W. H. Tonicity of the Heart and Blood-vessels. 8vo. Lond. **G. J. Romanes.**

Gorham, J. The Rotation of Coloured Discs, applied to Facilitate the Study of the Laws of Harmonious Colouring, by the Multiplication of Images of Objects into Kaleidoscopic Combinations. 8vo. Lond., 1861. **Author.**

Goss, H. On some recently discovered Insecta from Carboniferous and Silurian Rocks. 8vo. Lond,, 1885. **Author.**

Gravis, Dr. A. Recherches Anatomiques sur les Organes Végétatives de l'*Urtica dioica*. 4to. Brussels, 1885. **Author.**

Gray, Prof. Asa. (1) Botanical Necrology of 1885. 8vo. 1886.—(2) Louis Agassiz. 8vo. Cambridge, Mass., 1886.—(3) Supplements and Indexes. Synoptical Flora of North America: The Gamopetalæ. 8vo. New York, 1886. **Author.**

Grieve, S. (1) The Great Auk or Garefowl (*Alca impennis*, Linn.), its History, Archæology, and Remains. 1 vol. 4to. Lond., 1885.—(2) Statistics of the Topographical Botany of Scotland, with Suggestions as to further Work. 8vo. Edinb., 1885. **Author.**

Hanbury, F. J. The London Catalogue of British Plants. Part 1. 8th ed. 8vo. Lond., 1886. **Author.**

Hansen, Prof. C. L'Exposition Géographico-Botanique de Copenhague. 8vo. Copenhagen, 1885. **Author.**

Hauer, Dr. F. R. von. Annalen des K. K. Naturhistorischen Hofmuseums. Band i. Nos. 1 & 2. 4to. Wien, 1886. **Museum.**

Hele, F. N. *Sphinx pinastri* (the Pine Hawk-Moth), a British Species. 8vo. 1885. **Author.**

Hemsley, W. B. Botany, Voyage of H.M.S. 'Challenger.' Report on the Present State of Knowledge of various Insular Floras. (Introduction.) 4to. Lond., 1885. **Author.**

Henslow, Rev. Prof. G. (1) Inaugural Address, Ealing Microscop. & Nat. Hist. Soc. 8vo. Lond., 1883.—(2) Seventh and Eighth Reports of Ealing Microscop. & Nat. Hist. Soc., 1884, 1885. 8vo. Lond., 1884–85. **Rev. G. Henslow.**

Hieronymus, G. Ueber *Rafflesia Schadenbergiana* (Göppert). 4to. Breslau, 1885. **Author.**

Hincks, Rev. T. Report on Polyzoa of Queen Charlotte's Islands. 8vo. Ottawa, 1884. **Author.**

Hopkinson, J. (1) Catalogue of Library, Hertfordshire Nat. Hist. Soc. and Field Club. 8vo. Lond., 1885.—(2) List of Works on the Geology of Hertfordshire, 1874–83. 8vo. 1885.—(3) Report on Phenological Phenomena observed in Hertfordshire, 1883–84. 8vo. Hertford, 1885. **Author.**

Hunt, A. R. (1) Action of Waves on Sea-beaches and Sea-bottoms. 8vo. Dublin, 1884.—(2) Formation of Ripple-marks. 8vo. Lond., 1882.—(3) Growth of Aplysiæ in Torbay. 8vo. Plymouth, 1878.—(4) Notes on the Submarine Geology of the English Channel off the Coast of South Devon. Part 3. 8vo. Plymouth, 1883.—(5) Notes on Torbay. 8vo. Plymouth, 1878.—(6) On some large Aplysiæ taken in Torbay in 1875. 8vo. Plymouth, 1877. **Author.**

Illustrerad Tidning. No. 20. Fol. Stockholm, 1885. Portrait of Linnæus. **M. Le Chevr. C. P. Sandberg.**

Japanese Case containing illustrated 4to volumes on Japanese Botany. Bequeathed to the Society by Mr. James White. **J. White.**

Japanese Gardeners' Catalogue. Parts 1-7. **C. Holme.**

Jeffreys, Dr. J. Gwyn. Reprints of his Conchological Papers, Deep-sea Explorations, Addresses, and Lectures, 40 in all. Presented by his son, **Howell Jeffreys.**

Journal of the Royal Geological Society of Ireland. Vol. vi. Part 3. 8vo. Dublin, 1882-84. **Society.**

Kidston, R. Catalogue of Palæozoic Plants in Departm. of Geology and Palæontology, British Museum. 8vo. Lond., 1886. **Trustees Brit. Mus.**

——. Relationship of *Ulodendron*, Lindley and Hutton, to *Lepidodendron*, Sternberg; *Bothrodendron*, Lindley and Hutton; *Sigillaria*, Brongniart; and *Rhytidodendron*, Boulay. 8vo. Lond., 1885. **Author.**

Kobelt, W. Reiseerinnerungen aus Algerien und Tunis. 8vo. Frankfurt-am-Main, 1885. **Senckenb. Ges.**

Kölliker, Prof. A. (1) Herr Paul Albrecht zum letzten Male. I. Die Chorda in der Nasenscheidwand des Ochsen. 8vo. Würzburg, 1885.—(2) Histologische Studien an Batrachierlarven. 8vo. Würzburg, 1885.—(3) Stiftchenzellen in der Epidermis von Froschlarven. 8vo. Leipzig, 1885. **Author.**

Kronfeld, M. Ueber einige Verbreitungsmittel der Compositenfrüchte. 8vo. Wien, 1885. **Author.**

Lamic, J. Recherches sur les Plantes Naturalisées dans le Sud-Ouest de la France. 8vo. Bordeaux, 1885. **Author.**

Langley, J. N. Formation of Ferment in the Sub-Maxillary Gland of Rabbit. 8vo Lond., 1884. **G. J. Romanes.**

Lees, E. The Botanical Looker-out among the Wild Flowers of the Fields, Woods, and Mountains of England and Wales. 1st ed. 8vo. Lond., 1842. **Rev. W. Newbould.**

Lloyd, J. U. and C. G. Drugs and Medicines of North America. Vol. i. Parts 1-8. 8vo. Cincinnati, 1885. **Authors.**

Lubbock, Sir J. (1) Flowers, Fruits, and Leaves. 8vo. Lond., 1886.—(2) On Leaves. 8vo. Lond., 1885. **Author.**

Lydekker, R. Catalogue of Fossil Mammalia in the British Museum. Part 2. Ungulata—Artiodactyla. 8vo. Lond., 1885. **Trustees Brit. Mus.**

Macalister, Prof. A. (1) Introduction to Animal Morphology and Systematic Zoology. Invertebrata. 8vo. Lond., 1876.—(2) Ditto. Vertebrata. 8vo. Dublin, 1878. **Dr. J. Murie.**

M'Coy, Frederick. Prodromus of the Zoology of Victoria. Decade x. Roy. 8vo. Melbourne, 1885. **P. H. Macgillivray.**

MacGillivray, P. H. Descriptions of new, or little known, Polyzoa. Parts vi.-ix. 8vo. Melbourne, 1886. **Author.**

M'Intosh, Prof. W. C. (1) Address Biolog. Sect. Brit. Assoc. 8vo. Aberdeen, 1885.—(2) Arrangement of Muscular Fibres of Valve in Right Ventricle of Heart of Bird. 8vo. Edinb., 1862.—(3) Beiträge zur Anatomie von *Magelona*. 8vo. Leipzig, 1877.—(4) Boring of certain Annelids. 8vo. Lond., 1868.—(5) On the "Yellow Fins" of the Allan Water. 8vo. Perth, 1872.—(6) Reports of the Marine Laboratory, St. Andrews. No. 2. 8vo. Edinb., 1885.—(7) Spawning of certain Marine Fishes—*Clupea Harengus*. 8vo. Lond., 1885. And 15 reprints of other papers. **Author.**

Malm, A. H. Om Sowerby's hval. 8vo. Stockholm, 1885. **Author.**

Marsh, O. Dinocerata: a Monograph of an Extinct Order of Gigantic Mammals. Fol. Washington, 1884. **Author.**

Miall, Prof. L. C. Description of the Remains of *Megalichthys* in the Leeds Museum. 8vo. Leeds, 1885. **Author.**

Moloney, Capt. C. A. Catalogue of Exhibits of the Colony of Lagos, West Africa, in Colon. and Indian Exhib. 8vo. Lond., 1886.

Morris, C. Attack and Defence as Agents in Animal Evolution. 8vo. Philadelphia, 1885. **Author.**

Mueller, Baron Ferd. von. Descriptive Notes on Papuan Plants. vi. 8vo. Melbourne, 1885. **Author.**

Naturalist. Vols. x. & xi., 1885–86. 8vo. Lond., 1886. **Editors.**

Nature. Vols. xxxii., xxxiii. 4to. Lond., 1885–86. **A. Macmillan.**

Netto, L. Conférence faite au Muséum National, en Présence de LL. MM. Impériales. 8vo. Rio de Janeiro, 1885. **Museum.**

Nevill, G. Hand-list of Mollusca in Indian Museum, Calcutta. Part ii. 8vo. Calcutta, 1885. **Trustees Ind. Mus.**

Newton, E. T. (1) *Gastornis Klaassenii*, a Gigantic Bird from the Lower Eocene of Croydon. 8vo. Lond., 1885.—(2) A Synopsis of the Animal Kingdom, with especial Reference to the Fossil Forms. 8vo. Lond., 1886. **Author.**

Olsen, O. T. The Fisherman's Nautical Almanack. 8vo. Grimsby, 1886. **Author.**

Parfitt, E. (1) Crustacea Podophthalmata, and the Histology of their Shells. 8vo. Plymouth, 1870.—(2) Lichen Flora of Devon. 8vo. Plymouth, 1883. —(3) Moss Flora of Devon. 8vo. Plymouth, 1885. Series of articles on FAUNA OF DEVON: (4) Coleoptera. 8vo. Exeter, 1867.—(5) Do., Echinodermata. 8vo. Plymouth, 1872.—(5) Do., Euplexoptera, Orthoptera, and Homoptera. 8vo. Plymouth, 1882.—(7) Do., Fishes. 8vo. Plymouth, 1875. —(8) Do., Hemiptera Heteroptera, or Plant Bugs. 8vo. Plymouth, 1884. —(9) Do., Hymenoptera: Family Ichneumonidæ. 8vo. Plymouth, 1881. —(10) Do., Lepidoptera. 8vo. Plymouth, 1878.—(11) Do., Mammalia. 8vo. Plymouth, 1877.—(12) Do., Neuroptera. 8vo. Plymouth, 1879.—(13) Do., Protozoa. 8vo. Exeter, 1869.—(14) Do., Sessile-eyed Crustacea. 8vo. Plymouth, 1873.—(15) Do., Zoophytes. 8vo. Exeter, 1866. And 17 other pamphlets, reprints. **Author.**

Pascoe, F. P. (1) List of British Vertebrate Animals. Sm. 8vo. Lond., 1885. —(2) List of Curculionidæ of the Malay Archipelago. 8vo. Genova, 1885. **Author.**

Payne, C. Harman. A short History of the Chrysanthemum. 8vo. Lond., 1885. **Dr. J. Murie.**

Pierre, L. Flore Forestière de la Cochinchine. Fasc. 1–4. Fol. Paris. **Govt. of France.**

Planchon, J. E. Les Vignes des Tropiques du Genre *Ampelocissus* considérées au point de vue pratique. 8vo. 1884–85. **Author.**

Planter's Gazette. N. s., vol. xxvi. 4to. Lond., 1886. **Editor.**

Proceedings of South London Entomological and Nat. Hist Soc. 8vo. Lond., 1885. **J. T. Carrington.**

Quarterly Record of Royal Botanic Society of London. Vol. ii. 8vo. Lond., 1883–85. **W. Sowerby.**

Radlkofer, Prof. L. (1) Ueber die Methoden inder botanischen Systematik insbesondere die anatomische Methode. Festrede. 4to. München, 1883.—(2) Application of the Anatomical Method in the Determination of the Materials of the Linnean and other Herbaria. 8vo. Lond., 1885.—(3) Ueber *Tetraplacus*, eine neue Scrophularineengattung aus Brasilien. 8vo. München, 1885. **Author.**

Ray, Lieut. P. H. Report of the International Polar Expedition to Point Barrow, Alaska. 4to. Washington, 1885. **W. B. Hazen, Chief Signal Officer.**

Redpath, P. Guide to Visitors to the Redpath Museum of M'Gill University. 8vo. Montreal, 1885. **P. Redpath.**

Reitter, E. Bestimmungs. Tabellen der europäischen Coleopteren. Necrophaga. 8vo. Brünn, 1885. **Author.**

Report of the Australian Museum for 1885. Fol. Sydney, 1885. **Trustees.**

Report of the Botanical Exchange Club of the British Isles for 1883 and 1884. 8vo. Manchester, 1885. **C. Bailey.**

Report of the Commissioners of the Trawl Net and Beam Trawl Fishing. Fol. Lond., 1885. **Sir J. Lubbock.**

Report on Public Gardens and Plantations of Jamaica. Fol. Jamaica, 1882-83. **D. Morris.**

Reports:—(1) Drift-net and Trawl-net Fishing for Herring. Fol. Edinb., 1852.—(2) Fishery Commissioners Ireland, 1863-76. Fol. Dublin, 1864-77. —(3) Fishing-Boats, Scotland, 1849. Fol. Edinb., 1849.—(4) Herring Fishery, Scotland. Fol. Edinb., 1867-77.—(5) Herring Fishery, West Coast of Sweden. Fol. Lond., 1878.—(6) Oyster Fisheries, 1876. Fol. Lond., 1876.—(7) Roy. Commission on Operation of the Acts relating to Trawling, seaming for Herring. Fol. Edinb., 1863.—(8) Salmon Commissioners, Tasmania. Fol. Hobart, 1884.—(9) Sea-Coast Fisheries Ireland Bill. Fol. Dublin, 1867. 34 Reports in all. **E. W. H. Holdsworth.**

Reports on:—(1) Botanic Gardens, Govt. House Grounds and Domain for 1881. Fol. Melbourne, 1882.—(2) Gold-fields of Victoria, 1884-85. Fol. Melbourne, 1885. **Govt. of Victoria.**

Reports of Forest Department, Madras Presidency, 1883-84. Fol. Madras, 1885. **Govt. of Madras.**

Ribbentropp, B. Review of Forest Administration in Brit. India, 1883-84. Fol. Simla, 1885. **Govt. of India.**

Richardson, Dr. B. W. The Asclepiad. Vol. ii. 8vo. Lond., 1885. **Author.**

Riley, C. V. The Periodical Cicada: an Account of *Cicada Septemdecim* and its Tredecim Race, with a Chronology of all Broods known. 8vo. Washington, 1885. **Sir J. Lubbock.**

Ringer, Prof. S. Regarding the Action of Hydrates of Soda, Ammonia, and Potash on Frog's Heart. 8vo. Lond. **G. J. Romanes.**

Rodrigues, J. B. *Esterhazya Superba*, especie nova da Familia das Scrophulariaceas. 8vo. Rio de Janeiro, 1885. **Author.**

Roth, H. L. Further Remarks on the Roots of the Sugar Cane. 8vo. Lond., 1885. **Author.**

Schaffranek, Dr. The Flora of Palatka and Vicinity. **Author.**

Science Gossip. Vol. xxi. 4to. Lond., 1885. **Editor.**

Scott, T. Curious Dwelling for a Hermit Crab. 8vo. Glasgow, 1885. **Author.**

Scottish Marine Station, Granton, Edinburgh. Price List of Specimens. 8vo. Edinb. **J. Murray.**

Seebohm, H. History of British Birds, with Coloured Illustrations of their Eggs. Vols. i.-iv. 8vo. Lond., 1883-85. **Author.**

Selwyn, A. R. C. Report of the Geological and Natural History Survey and Museum (and Maps) for 1882-84. 8vo. Montreal, 1885. **Govt. of Canada.**

Smith, J. A. (1) Discovery of Remains of Elk in Scotland. 8vo. Edinb., 1871.—(2) Notes on Ancient Cattle of Scotland. 8vo. Edinb., 1873. **Dr. J. Murie.**

Solereder, Dr. H. Ueber den systematischen Wert der Holzstructur bei den Dicotyledonen. 8vo. München, 1885. **Author.**

Sollas, Prof. W. J. (1) On an Hexactinellid Sponge from the Gault, and a Lithistid from the Lias of England. 8vo. Dublin, 1885.—(2) On *Vetulina Stalactites* (O. S.) and the Skeleton of the *Anomocladina*. Pamph. 8vo. Dublin, 1885. **Author.**

Somerville, A. List of British Marine Shells, including the Brachiopoda; after the Arrangement in Jeffreys's 'British Conchology,' with Alterations and Additions to 1885. Fol. Glasgow, 1886. **Author.**

Stroud, Dr. J. W. The Honey Bee (*Apis mellifica*), its Natural History and Management. 8vo. Port Elizabeth (Natal), 1885. **G. J. Romanes.**

Sundevall, Carl J. (1) Conspectum Avium Picinarum. Roy. 8vo. Stockholm, 1866.—(2) Methodi Naturalis Avium Disponendarum Tentamen. Pars 1. Roy. 8vo. Stockholm, 1872.—(3) Ditto. Pars 2. Roy. 8vo. Stockholm, 1873. **Dr. J. Murie.**

Temple, Sir R. Address to the Geographical Section of British Association at Southampton. 8vo. Lond., 1882. **Council Brit. Assoc.**

Tepper, J. G. O. Our Local Orchids. (A Lecture before the Field Naturalists' Section, Royal Society.) 8vo. Adelaide, 1885. **Author.**

Thomé, O. W. Text-Book of Structural and Physiological Botany. Transl. and edited by A. W. Bennett. 5th ed. 8vo. Lond., 1885. **A. W. Bennett.**

Thompson, A. T. Lectures on the Elements of Botany. 8vo. Lond., 1822. **Rev. W. Newbould.**

Todaro, A. Hortus Botanicus Panormitanus. Vol. ii. fasc. 4. Fol. Panormi, 1885. **Author.**

Transactions of the Edinburgh Naturalists' Field Club. Vol. i. Pts. 1–4. 8vo. Edinb., 1882–85. **S. Grieve.**

Transactions of the South-African Philosophical Society. Vol. iii. pt. 2. 8vo. Cape Town, 1885. **Society.**

Traustedt, M. P. A. Vestindiske Ascidiæ Simplices. 8vo. Kjöbenh., 1881. **Author.**

Trimen, Dr. H. (1) Systematic Catalogue of the Flowering Plants and Ferns indigenous to or growing wild in Ceylon. 8vo. Colombo, 1885.—(2) Remarks on the Composition, Geographical Affinities, and Origin of the Ceylon Flora. 8vo. Colombo, 1885. **Author.**

Turner, Prof. W. Lectures on Comparative Anatomy of the Placenta. 8vo. Edinb., 1876. **Dr. J. Murie.**

Vidal, D. Sebastian y Soler. Phanerogamæ Cumingianæ Philippinarum. Comision de la Flora Forestal de Filipinas. 8vo. Manila, 1885. **Author.**

Vöchting, H. Ueber die Regeneration der Marchantieen. 8vo. Berlin, 1885. **Author.**

Wachsmuth, C., and F. Springer. Revision of the Palæocrinoidea. 8vo. Philadelphia, 1885. **Authors.**

Wainio, Dr. E. Adjumenta ad Lichenographiam illustrandam Lapponiæ Fennicæ atque Fenniæ borealis. 8vo. Helsingfors, 1883. **Author.**

Waring, Dr. E. J. Bibliotheca Therapeutica, or Bibliography of Therapeutics. Vol. ii. 8vo. Lond., 1879. **Author.**

Weber, Dr. M. Studien über Säugethiere. 8vo. Jena, 1886. **Dr. J. Murie.**

Wellington College Natural Science Society. 16th Annual Report, for 1885. 8vo. Wellington (Berks), 1886. **College.**

Whiteaves, J. F. Catalogue of Canadian Pinnipedia, Cetacea, Fishes, and Marine Invertebrata. Colonial and Indian Exhibition. 8vo. Ottawa, 1886. **Govt. of Canada.**

Whitehead, A. Reports on Insects injurious to Hop Plants, Corn Crops, and Fruit Crops in Great Britain. Nos. 1, 2. 8vo. Lond., 1885–86. **Author.**

Willkomm, Dr. M. Die mikroskopischen Feinde des Waldes. Hefte 1 & 2. 8vo. Dresden, 1866–67. **F. Crisp.**

Wood-Mason, J. Some Account of the "Palan Byoo" or "Teindoung Bo" (*Paraponyx oryzalis*). 8vo. Calcutta, 1885. **Author.**

Worsley-Benison, H. W. S. Charles Darwin: Presidential Address, 1885. 8vo. Bath, 1886. **Author.**

Zigno, Baron Achille de. Sopra Uno Scheletro Fossile di *Myliobates*. 4to. Venezia, 1885. **Author.**

Zoologist. (1885–86.) 8vo. Lond., 1886. **T. P. Newman.**

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[Price 3s.

8497
Oct. 8. 1887

# PROCEEDINGS

OF THE

# LINNEAN SOCIETY OF LONDON.

FROM NOVEMBER 1886 TO JUNE 1887.

LONDON:
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# PROCEEDINGS

OF THE

# LINNEAN SOCIETY OF LONDON.

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## (SESSION 1886–87.)

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November 4th, 1886.

**WILLIAM CARRUTHERS**, F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

The President, in welcoming the Fellows to the first Meeting of the new Session, made some remarks as to what work had been done during the Recess, and in a passing tribute commented on the loss which Science and the Society had sustained by the death of Mr. George Busk, a former Secretary and Vice-President.

The President afterwards drew attention to stained specimens under the microscope of phosphorescent organisms obtained by him in the Firth of Clyde in September last, the chief object being *Ceratium tripos*.

Mr. John Murray thereafter made further remarks on the same, stating that near Cumbrae Islands immense quantities of yellow material containing these organisms in abundance were obtained at every haul. He alluded to his own observations of the species being found in long chains in the ocean (Narr. Cruise of the 'Challenger'), and to Klebs's opinion of *Ceratium* being a genus of unicellular Algæ, and not an Infusorian animal as commonly supposed.

Prof. J. Macoun made remarks on a series of Cones of Canadian

*Piceas.* He showed that the various forms occurring from the east to the west of the Continent, which had been hitherto considered different species, were doubtless local varieties of only one species, slightly modified according to altitude and the region they inhabit.

Dr. Francis Day exhibited a Salmon Parr twenty months old, raised at Howietoun from parents which had never visited the sea. Dr. Day also showed some coloured drawings made in October 1886 of hybrids raised there. One of these was a cross between the American Charr and the Loch-Leven Trout; another a cross between the American and the British Charr; and a third between the last-mentioned hybrid and the Loch-Leven Trout; all being fertile.

There was shown for Mr. W. D'Arcy Godolphin Osborne fresh specimens of a white variety of *Crocus nudiflorus,* gathered by him in the neighbourhood of Biarritz, France. This variety was first found by him there in the autumn of 1882, and has been figured by Mr. George Maw in his recent monograph of the genus.

Mr. E. M. Holmes exhibited examples of *Lycoperdon echinatum*, Pers., viz. the young plants, and specimens showing the reticulate appearance of the peridium left by the falling off of the spines.

Mr. F. P. Pascoe exhibited one of the round olive-green balls from Sicily formed by the action of the sea on fragments of the *Posidonia caulinia,* and reduced after a few days' exposure to a flat cake-like body densely covered with minute crystals of salt. He also exhibited examples of a remarkable mode of growth of the common Acorn-shell (*Balanus*). It would appear that several individual animals had united their shells to form a common tube; the outer valves of each individual had also more or less lengthened, forming a series of irregular subsidiary tubes radiating from the apex of the primary one.

The following papers were read:—

1. "The Natural History of the Genus *Dero.*" By Edward C. Bousfield, L.R.C.P. Lond. (Communicated by Dr. J. Murie, F.L.S.)

2. "Berberidearum Japoniæ Conspectus." By Tokutaro Ito. (Communicated by W. T. Thiselton Dyer, C.M.G., F.L.S.)

3. "On the Genus *Lophopus*, with a Description and Remarks on a new Species from New South Wales." By Stuart O. Ridley, F.L.S.

## November 18th, 1886.

WILLIAM CARRUTHERS, F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Henry Bury, Esq., was elected a Fellow.

Mr. W. H. Beeby showed specimens of *Callitriche truncata*, Guss., from near Westerham, Kent. The species had long been supposed to be extinct in this country. It was only known as British from dried specimens from Sussex in Borrer's Herbarium. Mr. Beeby's attention was directed to the Westerham station by dried specimens (also in Borrer's Herbarium) labelled *C. pedunculata*, and collected by the Rev. G. E. Smith. Dr. Trimen remarked that he had some years ago sought for the plant in its old Sussex station, but without success, as it seemed to have been driven out of the field by *Anacharis*.

Mr. D. Morris exhibited two enlarged photographs of the *Castilloa* Rubber-Tree of Central America (see Trans. Linn. Soc. ser. 2, Bot. vol. ii. pt. 9). The larger photograph illustrated the manner in which trees were treated to extract rubber by a spiral cut from above downwards. Trees of ten years old and upwards are said to yield about eight gallons of milk at the first bleeding. This milk is coagulated by the use of the juice of *Calonyctyon speciosum*, and the rubber prepared by washing and pressing. Mr. Morris described the habit and growth of the trees in their native forests, and expressed the opinion that for cultural purposes this rubber-tree may be better suited to the circumstances of planters than any other. It could be utilized as a shade-tree in Cacao- and Coffee-plantations, and yield at the end of ten years at the rate of twenty shillings per tree in marketable rubber. In British Honduras trees are tapped for rubber every three or four years.

Mr. A. D. Michael exhibited living specimens and preparations of an *Argas*, received from Mrs. Crawford, the State Entomologist of Adelaide, Australia. These appear to be identical with the much dreaded *Argas persicus*, Fisch., the bite of which was supposed to cause madness and death.

Mr. H. N. Ridley made remarks on specimens in spirit, and drawings by Mr. J. Nugent Fitch, of species of *Coryanthes*, viz. *C. macrantha*, Hook., and *C. maculata*, var. *punctata*. He mentioned that Mr. Rodway, of Demerara, had lately published some observations showing that the statement hitherto prevalent as to the fertilization of certain species of the genus by Bees, as averred by Crüger, was not true in every case, as in

*C. speciosa* he (Mr. Rodway) had noticed that a kind of green fly was the fertilizer.

Mr. George Murray exhibited specimens of *Rhipilia* in spirit, lately obtained by him in Grenada, West Indies, from a depth of five fathoms.

Mr. W. Fawcett showed coloured drawings of *Hydnora abyssinica* and *H. bogotensis*, sent by Sig. Beccari from Florence. They clearly manifest the difference between the two species; for, besides differing in colour, *H. abyssinica* has a hook-like process below the apex, and its ramentiferous surfaces have long ramenta at their margins, whereas there is no hook-like process in *H. bogotensis* and the margins are naked. Both species are distinguished from the common *H. africana* by the ramentiferous surfaces not extending to the apex.

Mr. C. T. Musson exhibited (1) a branch of a Blackthorn obtained near Newark, and showing a curious proliferation of the branchlets; (2) an old wooden snuff-box (probably satin-wood) having on its polished surface in the graining the figure of a head resembling that of Napoleon I.

Mr. Thomas Christy exhibited roots, stems, and pods of an African *Strophanthus*. The pods were in their native packing, and probably the finest that have hitherto been received in England. Of *S. hispidus* from East Africa, the seed is made into a paste with clay, and a small portion of this placed on the arrow-heads by the natives. It is now imported into this country as a remedy in fatty degeneration of the heart. The West-African *Strophanthus* is as yet but imperfectly known; it is a climbing plant, running up to the tops of the highest trees.

The following papers were read:—

1. "On the Floral Conformation of the Genus *Cypripedium*." By Dr. Maxwell T. Masters, F.L.S.

2. "Monograph of Recent Ephemeridæ."—Part V. and Conclusion. By the Rev. A. E. Eaton, M.A. (Communicated by Sir John Lubbock, Bart., F.L.S.)

3. "Further Contributions to the Flora of Madagascar." By John G. Baker, F.R.S., F.L.S.

## December 2nd, 1886.

William Carruthers, F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

worth Lascelles, Esq.,, Frederick Sander, Esq., Robert von Lendenfeld, Esq., John Samson, Esq., Harry Sanford Burton, Esq., Arthur Warwick Sutton, Esq., and Charles Westwood Wilson, Esq., were elected Fellows.

George Sim, Esq., was elected an Associate.

The President read a letter from the Rev. M. J. Berkeley intimating the lamented death of his old fellow-worker Mr. C. E. Broome, a short obituary of whom he had drawn up for the Society.

Mr. George Maw exhibited ten photographs of living *Narcissi* made in the Riviera in 1870. He afterwards gave a short account of the North-African and South Spanish *Narcissi*, as met with by him on recent visits there. *N. papyraceus* extends as far as Fez in Morocco, south of which *N. Broussonetii* takes its place, extending from Saffi to Mogador. Allusion was then made to the smallest of the white forms of *N. Tazzetta* in the island of Teneriffe. Of the autumnal species reference was made to *N. nudiflorus*, which had been lost sight of for half a century, but which Mr. Maw had re-discovered in 1883 in the neighbourhood of Gibraltar, and again recently near Tangier. A hybrid between *N. viridiflorus* and *N. serotinus* was found by him near Gibraltar; and a series of hybrids between *N. viridiflorus* and *N. elegans* were gathered in North Morocco. Mr. Maw observed that *N. serotinus* was limited to the south of Spain and *N. elegans* to the Morocco coast, the latter plant bearing true leaves. *N. viridiflorus* and *N. serotinus* he asserted to be leafless, the scape appearing without leaves; and what seemed leaf-organs he assumed were flowerless scapes. Mr. Maw also referred to the abundance of a small Amaryllid, *Tapeinanthus humilis*, Herb. (*Pancratium humile*, Cav.), about eight miles south of Tangier, which he collected both in fruit and flower. Of miscellaneous plants collected by him during the tour, *Pæonia coriacea*, *Lavandula lunata*, *Eryngium glaciale*, and *Asplenium Petrarchæ* were obtained on the Sierra Nevada, and *Saxifraga biternata* at El Forcal near Antiquerra, in South Spain.

The following papers were read:—

1. "On the Loch-Leven Trout (*Salmo levenensis*)." By Dr. Francis Day, F.L.S.

2. "Hermann's Ceylon Herbarium and Linnæus's Flora Zeylanica." By Dr. Henry Trimen, F.L.S.

3. "On a new Species of *Brachyonychus* from the Mergui Archipelago." By Henry W. Bates, F.R.S., F.L.S.

### December 16th, 1886.

WILLIAM CARRUTHERS, F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Arthur Wells Bawtree, Esq., Frederick Justen, Esq., Trailokya Nath Mukharji, Esq., Francis Wall Oliver, Esq., and Richard Vowell Sherring, Esq., were elected Fellows; and George Nicholson, Esq., was elected an Associate.

The President announced that Sir George MacLeay, K.C.M.G., F.L.S., had presented to the Society a framed water-colour portrait of the Rev. William Kirby, F.L.S., the distinguished entomologist; also the manuscripts and correspondence of his father, Alexander MacLeay (elected F.L.S. 1794), for many years Secretary to the Society.

For these valuable donations a special vote of thanks was unanimously accorded.

Prof. F. O. Bower exhibited and made comments on a number of large photographs taken in Ceylon, chiefly representing the Vegetation of the island, and of the Botanic Garden of Peradeniya. Among the plants were:—*Ficus religiosa*, said to be 2000 years old, *F. Trimeni*, *F. elastica*, the Banyan Tree at Nequimbo, the Travellers' Palm, *Ravenala madagascariensis*, the avenue of *Oreodoxa regia* at Peradeniya, Jack-fruit, *Artocarpus integrifolia*, the Great Bamboo, *Dendrocalamus giganteus*, *Alsophila crinita*, *Corypha umbraculifera*, *Caryota urens*, *Lodoicea seychellarum*, &c.

Mr. Edward A. Heath exhibited a Stormy Petrel (Mother Carey's Chick), *Procellaria pelagica*, which was picked up alive in Kensington Gardens on the 9th December, the bird evidently having been driven inland during the great storm of the preceding day.

Mr. Daniel Morris exhibited the fresh leaves and the fibres thence extracted of *Agave Salmdyckia*, Baker, and *A. Ixtli*, the product of the latter being known as Sisal Hemp. Mr. Morris stated that the fibre extracted from *A. Salmdyckia* is relatively of little value, owing to its singularly curly texture; whereas that from *A. Ixtli* has beautifully straight glossy threads, admirably adapted for rope-making. The export of Sisal Hemp from Yucatan is said to reach the annual amount of £500,000.

Mr. W. T. Thiselton Dyer showed a Japanese volume on Botany, one of a set of the Honzo Zufu (Illustrations and brief descriptions of the Plants of Japan) by Iwasatti Tsanemassa.

The work in question consists of 96 volumes, containing 2000 coloured figures, many of which are not to be found elsewhere. Of the Honzo Zufu only two or three copies are known to be complete in the original native manuscript form, as only part was published at Yedo (Tokio) in 1828.

[The entire memorandum, as drawn up by Mr. F. V. Dickins, is published in the 'Journal of Botany' for May 1887, pp. 147–148.]

The President exhibited and made remarks on a spike of Maize obtained from an ancient grave at Ancon, Peru, and on samples of pre-historic Wheat from ancient British and Romano-British burial mounds near Salisbury and Winklebury, Wilts, together with wheat, for comparison, from Dunstable market, mounted by Mr. Worthington G. Smith, F.L.S.

The following papers were read:—

1. "Experiments on the Sense of Smell in Dogs." By George J. Romanes, F.R.S., F.L.S.
2. "On a new Instance of Apospory in *Polystichum angulare*, var. *pulcherrimum*." By Charles T. Druery, F.L.S.
3. "On Apospory and Allied Phenomena." By Prof. F. O. Bower, F.L.S.

The President having announced that H.R.H. the Prince of Wales had expressed a wish to belong to the Society (Bye-Laws, Chap. III. Sect. 1), proposed from the Chair the Prince as an Honorary Member; and by open vote His Royal Highness was unanimously elected.

## January 20th, 1887.

William Carruthers, F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

John Benbow, Esq., and Fiennes Stanley Wickham Cornwallis, Esq., were elected Fellows.

It was announced from the Chair that H.R.H. the Prince of Wales had officially inscribed his name on the Roll of the Society.

The President presented to the Society a portrait in oil of Francis Masson, the botanical collector, who was elected F.L.S. 1796. (*Cf.* Journ. Bot. xxii. 1884, pp. 114–128.)

Prof. Bayley Balfour exhibited specimens of the so-called "Ginger-beer" Plant, with slides showing its microscopic structure. He pointed out that, although well known to many people, and used as a means of manufacturing an acid drink from a sugar solution and ginger, yet no scientific account of the organism had appeared except a short note by Mr. G. Worthington Smith in the 'Gardener's Chronicle,' 1884. The plant in question has the appearance of a white *Nostoc*, and is composed of a Bacterium (passing through all forms of rods, coils, and filaments), which apparently constitutes its greater part; and associated with this is a sprouting fungus. Judging from the descriptions and figures of Kern of the "*Kephir*" used in the Caucasus to induce fermentation in milk, the "Ginger-beer" Plant resembles it, but with modifications. In connexion therewith it is of interest to note that it is said the "Ginger-beer" Plant was introduced into Britain by soldiers from the Crimea in 1855.

A letter was read from Mr. Benjamin T. Lowne, referring to an exhibition by him of photographs from microscopical specimens of the retina of Insects. One section represented the retinal layer detached from the opticon; other sections showed the basilar layer: thus practically affording evidence that the nerves terminate in end-organs, viz. rods placed in groups beneath the opticon, a view promulgated by Mr. Lowne in his memoir published in the Society's Transactions (2nd ser. Zool. ii. pp. 389–420).

Mr. J. Waller exhibited a block of wood, part of an Oak grown in Sussex, which, on being sawn through in a longitudinal direction, was found to contain an excavated tunnel and a large living larva of the Longicorn Beetle, *Prionus coriarius*.

Mr. W. T. Thiselton Dyer showed and made remarks on two sheets of dried specimens of Alpine Plants from the Corea.

The following papers were read:—

1. "The Effects of Stimulation on Turgescent Vegetable Tissues." By Anna Bateson and Francis Darwin, F.L.S.

2. "On the Anatomy, Development, and Morphology of the Tissues of the Sporophore in Mosses.—I. Polytrichaceæ." By J. Reynolds Vaizey, B.A. (Communicated by S. H. Vines, F.L.S.)

3. "Report on the Hydroida and Polyzoa of the Mergui Archipelago." By Rev. Thomas Hincks. (Communicated by Dr. J. Anderson, F.L.S.)

## February 3rd, 1887.

William Carruthers, F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Michael Comport Grabham, Esq., and George Wingate, Esq., were elected Fellows.

The vacancies among the Foreign Members, caused by the deaths of Dr. Edmond Boissier, Dr. Johann Rœper, M. Louis Réné Tulasne, Prof. Carl Theodor von Siebold, and Prof. Henri Milne-Edwards, having been announced by the President, the following nominations were made and the certificates ordered to be suspended:—

Dr. Georg August Schweinfurth, Professor of Botany, Cairo, Egypt.

Count Hermann Solms-Laubach, Professor of Botany, University of Göttingen.

Dr. Franz Steindachner, of the Academy of Sciences, Vienna, Austria, Conservator of Herpetology and Ichthyology, Royal Museum of Vienna.

Dr. Melchior Treub, Membre de l'Académie Royale Néerlandaise des Sciences, Director of the Botanic Garden, Buitenzorg, Java.

Dr. Augustus Weissmann, Professor of Zoology, University of Freiburg, Baden.

The President read a letter from Sir Francis Knollys, conveying the regret of H.R.H. the Prince of Wales that his engagements did not permit of his presence that evening to hear Dr. Aitchison's paper.

Mr. George Maw exhibited a specimen in flower of *Narcissus cyclamineus*, grown by him from bulbs sent by Mr. A. W. Tait of Oporto. The plant in question was known to Parkinson in 1640 ('Theatrum Botanicum'); it was also figured in the 'Jardin du Roy,' 1623, as *N. hispanicus minor, amplo calice, foliis reflexis*, and in the 'Theatrum Floræ' in 1637, part 20, as *N. hispanicus minor luteus, amplo calice, foliis reflexis*, = *N. minor*, var. *cyclamineus* of Haworth. Afterwards, having been lost sight of, it was rediscovered near Oporto by Mr. Johnston in 1885.

Mr. Maw also showed a drawing of *Crocus Karducharum* and another of *C. zonatus* for comparison. The former was introduced in 1885, and flowered in September 1886. It was originally discovered by Theodor Kotschy in the neighbourhood of Sivas, 3° or 4° west of Mokas and Schewan, that shown being from the same locality. The plant is allied to *C. zonatus* of the Taurus; but it is a much smaller plant with exceptionally short leaves, which are retained till the ensuing flowering-time, the two years' sets of leaves occurring simultaneously.

Mr. W. Simpson exhibited a series of sketches of the Afghan boundary, as illustrative of the region traversed by the Delimitation Commission.

A large series of Dr. Aitchison's collections were shown, among which were examples of the Mammals, Birds, Reptiles, and Insects; beside dried plants, economic products, and other objects connected with the Flora of the localities visited.

The following paper was read and discussed:—

"On the Fauna and Flora of the Afghan Boundary." By Dr. J. E. T. Aitchison, F.R.S., F.L.S.

Among the speakers who took part in the discussion were Sir J. D. Hooker, Mr. J. G. Baker, Dr. A. Günther, Mr. J. Ball, Mr. G. A. Boulenger, Dr. P. L. Sclater, Dr. W. T. Blanford, Mr. Oldfield Thomas, Sir Joseph Phayrer, Mr. R. Bowdler Sharpe, Mr. Howard Saunders, Mr. W. T. Thiselton Dyer, and Mr. C. O. Waterhouse.

## February 17th, 1887.

WILLIAM CARRUTHERS, F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

The Rev. Andrew Johnson exhibited drawings of an abnormal *Begonia Veitchii*, grown by him the preceding autumn. The peculiarity consisted in the flower having a single large central flask-shaped organ, surmounted by a single simple straight style, thus indicating an hermaphrodite condition, while presenting an apparent resemblance to the normal female organs of *Laurus nobilis*.

Mr. E. Morell Holmes exhibited some irregularly developed Lemons, in which the carpels were more or less separated at the apex; the arrest of the normal union of the carpels being attributed to the bite of an insect in the early stage of the growth of the fruit.

There was exhibited for Mr. J. G. Otto Tepper a new *Stylidium* (*S. Tepperiana*, F. Muell.), collected by Mr. Tepper, 13th November, 1886, on Mount Taylor, Kangaroo Island, Victoria, Australia.

Specimens of *Peziza coccinea*, sent by Mr. W. H. Lamb, from Ilfracombe, were exhibited by Sir John Lubbock, V.P.L.S.

A dried specimen of *Primula imperialis*, Jungh., collected by Dr. Sydney Hickson in Java, was exhibited from the Royal Gardens, Kew. This is a giant form of *Primula*, being over three feet in height. Plants of this Himalayan and Malayan species are now under cultivation at Kew.

Mr. George Maw showed two *Narcissi*, both of which have been known under the name of *N. cernuus*. The White Daffodil, or Ajax, discovered by Mr. Buxton at a height of 7000 feet in a valley of the Spanish Pyrenees, is of interest because it is the only white Daffodil now known in a wild station, though four, more or less distinct, viz. *N. moschatus*, *N. cernuus*, *N. albicans*, and *N. tortuosus*, were known to the earlier botanists, probably as early as the year 1600. It is open to question whether the white Daffodil exhibited should be referred to *N. cernuus* or *N. moschatus*. Linnæus's name *moschatus* was applied to a white Daffodil from the Pyrenees. The name *cernuus* as applied to an Ajax or Daffodil was used by Roth, Schultes, and Haworth in 1817, 1831, and 1835; but Salisbury in 1806 applied the name *cernuus* to *N. triandrus*, Linn., or a variety of it. Dr. Willkomm, in his 'Illustrationes Floræ Hispanicæ,' has recently described a third species under the name of *N. cernuus*. The specimen exhibited was flowered by the Rev. C. Woolley Dod, from bulbs collected by Dr. Henriques of Coimbra, in the Serra d'Estrella, Portugal. It is a very diminutive self-coloured orange species, with suddenly reflexed segments barely half an inch in length, and with a corona half an inch long. It is allied to *N. triandrus*; but is evidently distinct from the yellow forms of that species, and may be identical with a plant collected by Blanco at Puente Horrida (? Fuente Torrido), in the province of Jaen, a single specimen of which exists in the British Museum.

The following papers were read:—

1. "Phytobiological Observations.—Part II. Forms of Seedlings; and on the Leaf of *Liriodendron* (the Tulip-Tree)." By Sir John Lubbock, Bart., Vice-Pres. Linn. Soc.

2. "On *Dichelaspis pellucida*, from the Scales of an Hydrophid obtained at Mergui." By Dr. P. Hoek of Leiden. (Communicated by Dr. John Anderson, F.L.S.)

## March 3rd, 1887.

WILLIAM CARRUTHERS, F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Bernard S. Dyer, Esq., Rt. Hon Sir Edward Fry, Sydney Turner Klein, Esq., Charles Maries, Esq., Rev. Edward Shearburn Marshall, Alfred Wilby Tait, Esq., Robert Morgan, Esq., and John Benjamin Stone, Esq., were elected Fellows.

The President announced that in future the entrance to the Tea-Room during the Meetings would be from the Entrance-Hall, and not by the door leading directly into it.

The following papers were read:—

1. "The Genetic Affinities and Classification of Algæ." By Alfred W. Bennett, F.L.S.
2. "Fungoid Disease of *Colocasia* in Jamaica." By George Massee. (Communicated, with an Introductory Note, by Daniel Morris, Esq., F.L.S.)

## March 17th, 1887.

WILLIAM CARRUTHERS, F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Travers James Briant, Esq., John Errington de la Croix, Esq., and William West, Esq., were elected Fellows.

The Meeting having been made Special, the President announced that the Ballot would be taken for the election of Mr. Charles Baron Clarke as Councillor, in the room of Dr. Henry Trimen, resigned.

The following recommendations of the Seed-Cabinet Committee were submitted by the Council to the Fellows at the Meeting, made Special by notice, viz.:—

"That the Carpological Collection be disposed of, as being of no practical value to the Society, or of any intrinsic value, a few specimens belonging to the Wallichian Herbarium excepted."

"That representatives of the National Collection (British Museum and Kew) be invited to select such specimens as may be desired by those Institutions, and the residue be offered to the Oxford Botanic Gardens, where a Museum is in course of formation."

"That the small Earthenware Vase in the Carpological Collection be offered to the Ethnological Department, British Museum."

On the Ballot being taken, these recommendations were not approved by the Fellows present.

The Ballot for a Member of the Council having closed, the President appointed Mr. Charles James Breese, Mr. Daniel Morris, and Mr. Charles Tyler, Scrutineers. The votes having been counted and reported to the President, he declared Mr. Charles Baron Clarke duly elected.

The following papers were read:—

1. "Crustacea from Singapore." By Alfred O. Walker, F.L.S.

2. "Observations on the Genus *Ficus*." By Dr. George King, F.L.S.

## April 7th, 1887.

**William Carruthers**, F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Hunter Jackson, Esq., Edward B. Poulton, Esq., and James Henry Dugdale, Esq., were elected Fellows.

Fresh specimens of a pure white variety of Primrose, which had been gathered growing wild near Biarritz, France, by Mr. D'Arcy Godolphin Osborne, F.L.S., were exhibited.

A series of photographs, taken instantaneously from life, of the White Stork (*Ciconia alba*) were exhibited by Mr. Edward Bidwell. These had been executed in Germany, and most accurately represented the birds during the breeding-season. Not only were the nests, young, and old birds thereon well shown, but also the remarkable attitudes assumed preparatory to alighting and commencing flight, as well as the peculiar twist of the neck in calling.

Dr. Francis Day exhibited and described the peculiarities of some malformed Trout in an early stage of development.

The following paper was read:—

"Observations on the Gentians." By Prof. T. H. Huxley, F.R.S., F.L.S.

## April 21st, 1887.

William Carruthers, F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

William Isaac Spencer, Esq., was elected a Fellow.

Mr. E. M. Holmes exhibited specimens of various species of *Thorea* from Borneo and Sumatra, which plants yield vegetable fats for technical purposes. Several species of *Dichopsis*, affording gutta-percha from the bark and fat from the seeds, were also shown. Mr. Holmes pointed out the importance of the cultivation of the more valuable of these trees, among others *D. oblongifolia* and *Ceratophorus Loerii*, since they are being rapidly destroyed by the natives. Their cultivation has already been commenced by the Dutch ; but not a day too soon, as the trees take at least twenty years before becoming reproductive and valuable.

The following papers were read:—

1. "Variations in Plants and Animals." By P. Geddes. (Communicated by Dr. J. Murie, F.L.S.)
2. "The Gephyreans of Mergui." By Prof. E. Selenka. (Communicated by Dr. J. Anderson, F.L.S.)

## May 5th, 1887.

William Carruthers, F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

The President announced that the following Auditors to examine the Treasurer's Accounts had been nominated by the Council:—

For the Fellows, Mr. Frederick V. Dickins and Mr. George Maw; for the Council, Mr. James E. Harting and Mr. A. D. Michael. And by a show of hands these were unanimously elected.

Ernest William Forrest, Esq., and George Perrin, Esq., were elected Fellows.

William Haddon Beeby, Esq., Adolphus Kent, Esq., and John Medley Wood, Esq., were elected Associates.

Dr. Georg August Schweinfurth, Cairo, Count Hermann Solms-Laubach, Göttingen, Dr. Franz Steindachner, Vienna, Dr. Melchior Treub, Buitenzorg, Java, and Dr. Augustus Weissmann, of Freiburg, Baden, were elected Foreign Members.

Mr. J. R. Willis Bund exhibited specimens in spirit of the Rainbow Trout (*Salmo irridens*), which had been reared at the Hatcheries of the Fish-Culture Establishment at Delaford Park. He pointed out the great difference in size of members of the brood which were of the same age, and reared from the same batch. He mentioned that circumstances tended to show that it was a migratory fish; hence, as such, the value of its introduction into this country as a stream Trout would materially be diminished.

Photographs were exhibited and a letter read from Mr. J. G. Otto Tepper, F.L.S., regarding a Gall-formation on *Scævola spinescens*, R. Br. (Benth. Flora Austral. iv. p. 87), observed by him in South Australia. The following is an extract from Mr. Tepper's letter:—"The shrub in question is very densely branched, but not usually more than from 1½ to 3 feet high, in the neighbourhood of Ardrossan, York Peninsula. It occurs either solitarily among other shrubs on Tertiary ground of a poor clay intermixed and resting upon fossiliferous siliceous grits, or in small groups in shallow grassy depressions. As sheep were depasturing on the latter locality, the white fluffy lumps, promiscuously scattered among the spiny branches, were passed frequently unheeded under the supposition that they were locks of wool torn by the spiny branches from the passing sheep. The Gall is often seen on other shrubs, such as *Bursaria spinosa* &c. One day, being in want of some wool for a plug, I discovered that the supposed locks were really galls, each containing a single inhabitant, probably a member of the Coccidæ. Of these there are a considerable number of indigenous species, some producing very extraordinary forms of galls, often exhibiting some parts much exaggerated which are normally minute. In the present instance the hairs of the flower-buds were affected; while in other kinds of galls, very common on *Casuarina quadrivalvis*, the minute leaf-scales appeared enlarged, at the same time that the internodes between the whorls were almost entirely suppressed. I forward two copies of a photograph of galls, kindly taken by Fraser S. Crawford, Esq., Government Photo-lithographer; the specimens themselves will be forwarded as soon as possible for examination by some of the Linnean Society's specialists."

On behalf of Mr. W. Brockbank, F.L.S., Mr. J. G. Baker exhibited photographs of a series of forms of *Narcissus reflexus* of Brotero, from Ancora, N. Portugal, and grown in his garden at Didsbury. *N. reflexus* is ranked as a species by Nyman; but in the Portuguese plant the variation in the size and shape of the corona is so great, that it is evident that no definite line of demarcation can be drawn between the Spanish *N. triandrus* and the Brittany *N. calathinus*; and therefore that all the varietal forms of the section *Ganymedes* constitute a single species.

Mr. J. Harris Stone, M.A., exhibited a dried specimen of *Nicotiana glauca* which he found in the island of Fuerteventura, one of the easterly islands of the Canary group. The plant is a native of Buenos Ayres, where it grows to a height of 10 feet. In the islands of Fuerteventura and Lanzarote Mr. Stone found the plant growing in the village-streets and by the path-sides as a weed. From investigations made on the spot, he found that in some way or other it was introduced into the Canaries in 1867–69, since which date it has spread in a marvellously rapid manner. The plant is known to the islanders by the name of "mismo" (same), an appellation which arose from the suddenness of the plant's advent in the Canaries, the natives asking one another if they too had the plant at home, the answer being always "the same" (mismo). In general physiognomy, the Canary plant differs from the specimens in the British Museum from other parts of the world; and in the islands it only grows to a height of 3 or 4 feet.

Mr. R. Vowell Sherring exhibited a photograph of the mud-volcanoes of "Devil's Wood Yard," Trinidad, West Indies. It was mentioned that the amount of saline material in the mud seemed to have an influence on the vegetation which sprung up around.

There was also exhibited a photograph, taken in 1886 by Mr. R. D. M. Verbeck, of the Peak of Rakata, volcano of Krakatau, showing the changes that had taken place since the great eruption in 1883.

Some fresh Primulas from the neighbourhood of Saffron Walden were exhibited by Mr. Frederick J. Hanbury, including two interesting hybrids, viz. *Primula elatior* × *vulgaris* and *P. elatior* × *veris*. The latter is exceedingly rare, and has only been known as British during the last four years. Both are intermediate in their character between the parents, and neither of them produce any fruit in cultivation, but wither away immediately after flowering.

The following papers were read:—

1. "Experimental Observations on certain British Heterœcious Uredines." By Charles B. Plowright, F.L.S.

2. "*Vaccinium intermedium*, Ruthe, a new British Plant." By N. E. Brown, A.L.S.

3. "Bigeneric Orchid Hybrids." By Robert Allen Rolfe, A.L.S.

4. "Report on the Alcyoniid and Gorgoniid Alcyonaria col-

## May 24th, 1887.

### *Anniversary Meeting.*

William Carruthers, F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

Mr. Albert D. Michael, on behalf of the Auditors, presented the Annual Statement of Accounts, as shown on p. 18.

The Secretary then read his Report of the deaths, withdrawals, and elections of new Fellows for the past year as follows:—

Since the last Anniversary Meeting 17 Fellows had died, or their deaths been ascertained, viz.:—

Fellows (17).

George French Angas.
Christopher Edmund Broome.
Sir Charles James Fox Bunbury.
George Busk.
Sir Walter Elliot.
Arthur Grote.
Henry Fletcher Hance.
Rev. Edward Adolphus Holmes.
Arthur Edward Knox.
Thomas Moore.
Dr. Henry Munroe.
Rev. Thomas Powell.
Charles Prentis.
Hon. Edward Romilly.
Rev. Benedict Scortechini.
William Southall.
Edwin Story.

Foreign Member (1).

Prof. August Wilhelm Eichler.

During the past official year 8 Fellows had withdrawn, viz.:—

Dr. Bernard Edward Broadhurst.
Lieut.-Col. Godwin-Austen.
Rev. William Allport Leighton.
George William Oldfield.
Dr. Robert E. Peterson.
Frederick W. Phillips.
Charles Sharp.
Dr. Paul Henry Stokoe.

And 51 Fellows, 5 Foreign Members, and 5 Associates had been elected.

During the past year there had been received as Donations from private individuals to the Library 110 volumes and 522 pamphlets and separate impressions of memoirs. From the various Universities, Academies, and Scientific Societies there had also been received in exchange and otherwise 191 volumes and 211 detached parts; besides 69 volumes and 103 parts obtained by exchange and donation from the Editors and proprietors of independent periodicals. The Council, at the recommendation of

## *Receipts and Payments of the Linnean Society, from May 1st,* 1886, *to April 30th,* 1887.

| *Receipts.* | | | | £ | s. | d. |
|---|---|---|---|---|---|---|
| alance at Bankers' on 1st May, 1886 | | | | 381 | 12 | 9 |
| iterest on Investments | | | | 190 | 14 | 0 |
| dmission Fees | | | | 288 | 0 | 0 |
| nnual Contributions | | | | 1260 | 3 | 0 |
| ompositions | | | | 180 | 0 | 0 |
| les of Publications — | | | | | | |
| Transactions | £145 | 16 | 7 | | | |
| Journals | 116 | 10 | 10 | | | |
| Proceedings and Catalogues | 3 | 1 | 6 | | | |
| | | | | 265 | 8 | 11 |
| onations | | | | 113 | 10 | 2 |
| | | | | £2679 | 8 | 10 |

| *Payments.* | | | | £ | s. | d. |
|---|---|---|---|---|---|---|
| Taxes and Insurance | | | | 22 | 13 | 9 |
| Repairs and Furniture | | | | 38 | 0 | 10 |
| Coals and Gas | | | | 69 | 5 | 0 |
| Salaries and Commission | | | | 431 | 13 | 4 |
| Library:— | | | | | | |
| Books | £140 | 6 | 5 | | | |
| Binding | 82 | 8 | 2 | | | |
| | | | | 222 | 14 | 7 |
| Expenses of Publications:— | | | | | | |
| Printing | £583 | 15 | 6 | | | |
| Illustrations | 631 | 5 | 5 | | | |
| Distribution | 68 | 7 | 4 | | | |
| | | | | 1283 | 8 | 3 |
| Miscellaneous Printing and Stationery | | | | 65 | 14 | 0 |
| Petty expenses (including Tea and Postage) | | | | 74 | 10 | 4 |
| Investments | | | | 150 | 0 | 0 |
| Balance at Bankers' on 30th April, 1887 | | | | 321 | 8 | 9 |
| | | | | £2679 | 8 | 10 |

## *Investments on 30th April,* 1887.

| | £ | s. | d. | | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| Consols | 3426 | 7 | 1 | @ 102½ | 3511 | 19 | 0 |
| Metropolitan Board of Works 3½ per cent. Stock | 1079 | 11 | 3 | @ 109¾ | 1184 | 15 | 11 |
| Great Indian Peninsular Railway 5 per cent. Guaranteed Stock | 630 | 0 | 0 | @ 149 | 938 | 14 | 0 |
| Do. Do. Do. 4 per cent. Debenture Stock | 100 | 0 | 9 | @ 108 | 108 | 0 | 0 |
| Forth Bridge Railway 4 per cent. Stock | 450 | 0 | 0 | @ 110 | 495 | 0 | 0 |
| | | | | | £6238 | 8 | 11 |

FRANK CRISP, *Treasurer.*

The foregoing accounts have been examined and found correct.
12, 1887.

FRED. V. DICKINS,
WILLIAM CARRUTHERS,
ALBERT D. MICHAEL,
B. DAYDON JACKSON, *Auditors.*

the Library Committee, had sanctioned the purchase of 95 volumes and 114 parts of important works. The total additions to the Library were therefore 465 volumes and 950 separate parts.

The following are the numbers of Books bound during the last year:—In half-morocco 157, in full cloth 149, in vellum 160, in buckram 47, in boards or half-cloth 55, rebacked (half-morocco and cloth backs) 78, relabelled 135. Total 781.

It was proposed by Prof. G. J. Allman, seconded by Mr. Jenner Weir, and carried unanimously—"That an humble Address be presented to Her Majesty the Queen, Patron of the Society, on the occasion of the completion of the fiftieth year of her reign, and that the Council be instructed to prepare the same."

The Secretary having read the Bye-Laws governing the elections,—

The President then opened the business of the day, and the Fellows proceeded to ballot for the Council and Officers.

The Ballot for the Council having closed, the President appointed Dr. Robert Braithwaite, Mr. John Hopkinson, and Dr. Richard C. A. Prior, Scrutineers. The votes having been counted and reported to the President, he declared the following Members to be removed from the Council, viz.:—Mr. W. T. Thiselton Dyer, Prof. W. H. Flower, Mr. Francis B. Forbes, Sir John Lubbock, and Prof. H. N. Moseley.

And the following to be elected into the Council, viz.:—Dr. John Anderson, Prof. George Bond Howes, Dr. Maxwell T. Masters, Mr. Henry Seebohm, and Prof. H. Marshall Ward.

The Ballot for the Officers having closed, the President nominated the same Scrutineers. The votes having been counted and reported to the President, he declared the result as follows, viz.: —*President*, Mr. William Carruthers, F.R.S.; *Treasurer*, Mr. Frank Crisp; *Secretaries*, Mr. B. Daydon Jackson and Mr. W. Percy Sladen.

The President then delivered his Address (see p. 23).

Dr. Francis Day then moved the following Resolution, viz.:— "That the thanks of the Society be given to the President for his excellent Address, and that he be requested to allow it to be printed."

This having been seconded by Mr. John Forrest, was carried unanimously.

arrange for a Special General Meeting to celebrate the 100th anniversary of the founding of the Society."

The Senior Secretary read the Obituary notices of deceased Fellows.

Mr. Edward A. Fitch then proposed that a special vote of thanks be accorded to the President and Officers for their valuable labours during the Session, and this having been seconded by Mr. H. T. Stainton, was carried.

June 2nd, 1887.

WILLIAM CARRUTHERS, F.R.S., President, in the Chair.

The Minutes of the Anniversary Meeting (24th May) were read and confirmed.

Prof. Robert Wallace, Frederic M. Halford, Esq., Harry Berkeley James, Esq., and Ernest Clarke, Esq., were elected Fellows.

The President read the Address prepared by the Council, in compliance with the resolution passed at the Anniversary Meeting (24th May), for presentation to the Queen, as follows:—

"To the Queen's Most Excellent Majesty.

"MADAM,

"We, the President, Council, and Fellows of the Linnean Society of London, desire to approach your Majesty with sentiments of the most loyal attachment, and to tender our dutiful congratulations on the Jubilee of your Majesty's accession to the throne.

"We rejoice in the great material and moral progress that the country has made under your benignant sway; and especially as a Society devoted to the advancement of Science, we recognize with the highest satisfaction the immense advance in the knowledge of nature and the numerous applications of science to the amelioration and welfare of the people during the fifty years of your Majesty's reign.

"We give thanks to God, the Supreme Governor among the nations, for the protection and favour which He has extended to our Country under your Sceptre, and we pray Him to guard and bless your Majesty to your life's end."

The President nominated Dr. John Anderson, Mr. Frank Crisp, Dr. Maxwell T. Masters, and Prof. St. Geo. J. Mivart to be Vice-Presidents for the ensuing year.

Mr. D. H. Scott showed, under a high microscopic power, the presence of nuclei in *Oscillaria* and *Tolypothrix*. He explained that the plants were treated with picronigrosine for two hours, afterwards for two minutes with a concentrated solution of chloral hydrate, and then mounted in glycerine. The nuclei resemble the knot stage of those of higher plants, division stages being visible. The observation is important (1) with reference to the physiological question of the essential value of the nucleus to the vegetable cell, and (2) from a systematic point of view. Hitherto, from the alleged absence of a nucleus in the Schizophytes, these have been separated from the Thallophytes; but the distinction between the Cyanophyceæ and the true Algæ would now seem broken down. These conclusions confirm those of Zacharias lately published in the 'Botanische Zeitung,' but whose investigations appear to have been in a measure anticipated by Wille in 1883.

Some preparations of the stem of *Macrocystis* were shown by Mr. F. W. Oliver, which demonstrated the presence of plates of callus on the sieve-tubes which occur in this gigantic Laminarioid. He had compared the reactions given by the callus-plates in question, and had found them identical with those given by the same structures in such a plant as *Cucurbita*. The presence in *Macrocystis* of sieve-tubes was originally demonstrated by Prof. Parker, A.L.S., of New Zealand.

The following papers were read:—

1. "Transpiration as a Function of Living Protoplasm." By the Rev. G. Henslow, F.L.S.
2. "Vegetable Biology.—Part III. Influence of Light on Protoplasm." By Spencer le Marchant Moore, F.L.S.
3. "On an Alga on the European Tortoise." By Michael Cresse Potter, F.L.S.
4. "A new Genus of Orchideæ from St. Thomas." By H. N. Ridley, F.L.S.

## June 16th, 1887.

**William Carruthers**, F.R.S., President, in the Chair.

The Minutes of the last Meeting were read and confirmed.

William Elborne, Esq., J. Thornhill, Esq., William Threlfall, Esq., and Edmund G. Baker, Esq., were elected Fellows.

Mr. Tokutaro Ito, F.L.S., exhibited a Japanese work, "Suizoku Shashin," or Illustration of Fishes; by Ohkura Tatsuyuki. 2 vols., text and coloured plates, published at Yeddo (Tokio), in 1857.

There were shown for Sir Walter Buller, K.C.B., F.L.S, several of the royal quarto Plates in Chromo-lithograph, intended to illustrate his new edition, now in the press, of the 'History of the Birds of New Zealand.'

A very fine case of feathers of the now extinct *Moa* was also exhibited for Sir Walter Buller.

Lord Walsingham exhibited and made remarks on a living plant of *Datura* as a notable example of vegetable repair. The plant by accident was broken almost right across the stem. After being bandaged the gardener put it carelessly away in an outhouse, believing it sure to die. Some time after Lord Walsingham found the plant, not dead or drooping, but showing fair signs of vitality. It was then taken back to the greenhouse, and in due time such union of the stem occurred as ultimately to leave only a scar as evidence of the fracture, the plant meanwhile thriving and showing vigorous growth.

Mr. A. W. Waters showed a series of enlarged photographs of Bryozoa, taken to elucidate their structural peculiarities. Mr. Waters also showed a photograph of an *Agave americana*, grown by T. Rowley Hill, Esq., at Worcester.

Mr. R. V. Sherring exhibited some of the fronds of *Asplenium denticulatum*, which Fern he had obtained in Jamaica, and since successfully grown near Bristol.

Mr. Christy called attention to samples of Coffee-Beans in a diseased condition.

The following papers were read:—

1. "On the Flora of Munipore and Kohima." By Charles Baron Clarke, F.L.S.
2. "On some Gregarious Pyralidæ from the Punjaub." By Lord Walsingham, M.A., F.L.S.
3. "On a further Collection of Ferns from West Borneo made by Dr. Hose, Bishop of Singapore and Sarawak." By J. G. Baker, F.R.S., F.L.S.
4. "Fungi Japonici nonnulli." By Dr. C. Spegazzini and Tokutaro Ito, F.L.S.
5. "Contributions to South-African Botany.—Part III." By Harry Bolus, F.L.S.
6. "A Revision of the Genera *Microstylis* and *Malaxis*." By H. N. Ridley, M.A., F.L.S.
7. "Report on the Annelids of the Mergui Expedition." By Frank E. Beddard, M.A. (Communicated by Dr. John Anderson, F.L.S.)
8. "On Nuclei in *Oscillaria* and *Tolypothrix*." By Dukinfield H. Scott, F.L.S.
9. "Index Floræ Sinensis."—Part III. By Francis Blackwell Forbes, F.L.S., and William Botting Hemsley, A.L.S.
10. "On a Species of *Balanophora* new to the Japanese Flora." By Tokutaro Ito, F.L.S.
11. "On the Actiniæ of the Mergui Expedition." By Prof. Haddon. (Communicated by Dr. John Anderson, F.L.S.)

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## ANNIVERSARY ADDRESS OF THE PRESIDENT.

In looking back on another year of the Society's history from the standpoint of an Anniversary Meeting I am compelled to renew my expression of gratitude for the high honour you did me in placing me in this chair, nor can I fail to recall the sense of personal unfitness which oppressed me when you invited me to occupy this honourable and responsible position. I entered on the duties with the full conviction that, in their discharge, I would receive your sympathy and help, and I am now able to look back on a year of exceptional activity and honourable work, in which my defects have been covered by your considerate indulgence.

The first thing that arrests the mind in our annual retrospect is the disappearance from our roll of some loved and honoured names. I desire not to infringe on the task of recording the individual losses we have sustained, so admirably performed by our Senior Secretary, but if he will pardon me I would like, in a sentence, to recall one or two personally known to me whom we shall see here no more. Early in the year we had to mourn the loss of George Busk, an upright man, a true friend, and a distinguished naturalist. For several years he discharged the duties of Secretary, and he was worthy of any honour the Society could give him. We miss the quiet unobtrusive form of C. E. Broome, who, never neglecting the duties that devolved upon him as a country gentleman, found opportunity for indulging his ardent love for Botany, and became, as our publications testify, a justly recognized authority on the group of plants to which he specially devoted himself. Sir Charles J. F. Bunbury seldom came to our meetings, and was consequently known to only a few of the Fellows, but every one who knew him held him in high esteem. Sir Charles was a careful botanist, and used his knowledge of recent forms to interpret extinct plants. I should like to say a word about Hance and Scortechini, who, though never present at our meetings, have advanced our science in the far East, and about Elliot, Grote, Moore, and others—but I should only forestall Mr. Jackson in his work.

Hope, however, replaces sadness when we turn to the additions to our roll, and recognize, in some who have joined us, young naturalists, with advantages greater than those enjoyed by their predecessors, and with promise that justify us in believing that they will take up the work of those who have left us, and of those who happily are still with us, but whose age entitles them to lay down their tools.

Perhaps the most visible sign of our prosperity has been our large meetings. On several occasions our commodious room has been barely sufficient to accommodate the audience. This is itself a testimony to the value of the communications that have been submitted to us.

No one can look back in the most casual way without recalling several exceptionally important papers that occupied our attention. The various divisions of science within the province of the Society have supplied subjects of investigation. In Systematic Botany we have had the important memoir on the genus *Ficus* by Dr. King, embodying the results of much original observation, for which the author had exceptional opportunities in the large tropical garden at Calcutta under his care. The study of the living plants has led him to adopt a classification based upon the different kinds of flowers which occur in the genus, and which greatly modifies our estimate of the species of *Ficus*. Mr. H. N. Ridley laid before us a monograph of the genus *Liparis*, in which he carefully revised the work of his predecessors, and described no less than one hundred and ten species, of which a considerable number were new to science.

In Geographical Botany we have had Dr. Trimen's thorough revision of the original materials for the Flora of Ceylon, the plants collected two centuries ago by Hermann, on which Linnæus constructed his 'Flora Zeylanica.' The acquaintance Dr. Trimen has made with the plants of Ceylon, during his residence in that island as Director of the Gardens at Peradeniya, fitted him to undertake the critical examination of this historical collection, and enabled him to clear up difficulties and misapprehensions that have hitherto been connected with some of the Linnean species. The short paper on the Barberries of Japan by our young member Mr. Tokutaro Ito introduced us to an oriental who, on his own account as well as on account of his accomplished relatives, we welcomed as a fitting representative of a people that had made considerable progress in the critical knowledge of the indigenous flora of that country, even when they were cut off from all intercourse with the Western nations. Several papers have dealt with the vegetation of different regions of Africa, a continent that has supplied the larger number of new plants of recent years. Mr. Mitten described the Mosses and Liverworts collected by our late Fellow, Bishop Hannington, whose sad fate, still fresh in our memories, cut short a life full of the brightest promise for the high work to which he had devoted himself, as well as to science, to which he was warmly devoted. Prof. Oliver submitted to us an account of the plants collected by Mr. Johnston in his Kilimanjaro expedition; and Mr. Baker continued his exposition of the novelties that had reached him from Madagascar. The little oceanic island of Diego Garcia contains a limited flora which the waves have brought to it from distant continents, as Mr. Hemsley showed in his short communication regarding a collection of plants from that island. In Morphological Botany Dr. Masters communicated his studies on the conformation of the flower of *Cypripedium*, tracing, chiefly by the arrangement of the fibro-vascular bundles, its affinities to the normal type of the monocotyledonous flower. Sir John

Lubbock continued his phytobiological observations on the forms of seedling plants, and on the causes to which they are due; and Prof. Huxley placed before us the results of his study of the Gentians, and expounded the bearing of the peculiarities in the structure of the flower on the evolution and classification of this Order of plants.

The occurrence of a prothallus produced directly from the fronds of some Ferns without the intervention of a spore had been observed and described to the Society by Mr. Druery; a further instance, which he had observed, was brought to our notice by him. Prof. Bower investigated these abnormal growths and, in an exhaustive memoir, established that the prothallus was produced from a spore arrested in its development, and was to be considered a sport rather than a reversion. The structure and affinities of the various groups of Algæ were placed before us by Mr. Bennett, together with a review of the classification of the Order, and an exhibition of his view of the genetic relationships of the various forms.

The true nature of a malady which threatens destruction to a valuable food-plant in tropical America has been shown by Messrs. Massee and Morris to be a fungus nearly allied to that which has so seriously injured our potato-crops. The experiments on turgescent tissue, and its conduct under various reagents, were clearly expounded by Mr. Darwin, joint author of the communication on this subject with Miss Bateson. A long series of observations on the structure and affinities of the sporophore of Mosses were placed before us by Mr. Vaizey. Mr. Rolfe brought to our notice some remarkable hybrid Orchids, the produce of the artificial fertilization of a plant of one genus by the pollen of one of another genus.

One of the objects the Linnean Society had before it at its institution was the investigation and illustration of the Natural History of Great Britain and Ireland. This has not been neglected by the Fellows during the past year. We have had an account of observations and experiments by Mr. Plowright on the life-history of some of our parasitic Fungi, which not only add to the knowledge of our indigenous plants, but extend the number of those minute Fungi which have been ascertained in their individual histories to pass through such remarkably different phases. Mr. N. E. Brown has described to us the natural hybrid between *Vaccinium Myrtillus*, L., and *V. Vitis-Idæa*, L., detected by Prof. Bonney on Cannock Chase, and which, though not previously observed in Britain, had been met with in several localities on the continent.

In British Zoology we have had an account, by Mr. Sim, of *Lumpenus lampetriformis* on the north coast of Scotland, a fish recently added to our Fauna; and experiments on the Lochleven Trout have been placed before us by Dr. Day, showing that the characters peculiar to this fish in its native habitat disappear when it is removed to other localities.

In Systematic Zoology we have had before us the completion of two great works that already have in part appeared in our 'Transactions,'—I refer to the fifth and last part of the Rev. A. E. Eaton's Monograph of the Mayflies, in which he has added 5 new genera and 68 new species to the Ephemeridæ, and to the third and concluding part of the Monograph of recent Brachiopoda, the last work of Dr. Thos. Davidson, whose memoirs on the fossil as well as on the recent Mollusca of this group will remain a unique and lasting memorial to our late Fellow. We have monographs presented to us on the family Chalcididæ by Mr. Kirby, on the genus *Lophopus* by Mr. S. O. Ridley, and on *Dero* by Mr. Bousfield. In Geographical Zoology we have had communicated to us an important series of papers on the collections made by Dr. Anderson in his exploration of the Mergui Archipelago. Dr. Anderson himself described the Birds; the other groups have been dealt with in separate memoirs by Carter, Duncan, Bell, Moore, von Martens, De Man, Bates, Hincks, Hoek, Selenka, and S. O. Ridley. Some of these have already been published in our Journal, and it has been resolved to dedicate two volumes of the Journal to this extensive series of memoirs which so greatly extend our knowledge of the Fauna of the Indian Ocean. Another equally important series of papers have dealt with the large collections made by Dr. Aitchison in the Afghan Boundary Expedition. He obtained 800 species of plants, of which 100 were new to science; and his zoological collections were also very extensive. The night devoted to these papers was all too short for the purpose; their real value will only be fully appreciated when the parts of the 'Transactions' to be devoted to them are in our hands. Considerable progress has already been made towards this end. A liberal donation from the Government of India will assist the Society in meeting the necessarily heavy cost of this work.

Dr. Duncan and our Secretary, Mr. Sladen, have investigated the structure of the test of *Discoidea cylindrica*, a common Echinoid from the Upper Cretaceous formation; and by the help of a singularly well-preserved specimen in the British Museum these gentlemen expounded the structure and homologies of the various parts, and cleared up differences of opinion which exist among previous observers. To Mr. Romanes we are indebted for an extremely interesting account of his experiments in regard to the sense of smell in dogs; and to Mr. Geddes for his lucid paper on variations in plants and animals, in which he proposed to find, in the constructive and destructive changes that are essential to living protoplasm, the source of the modifications in cells, organs, and individuals.

first importance. The large meetings and the intelligent discussions of the subjects corroborate this estimate. It would be difficult now to imagine a meeting at which the communications were listened to in solemn silence, and not a word of criticism or corroboration was uttered. Yet for a long time in the history of our Society this was the case. Now, the discussion which follows each paper, besides adding greatly to the interest of the meeting, is often the means of drawing out new information, and it has even proved useful in correcting mistakes. It has been a matter of regret to me that the valuable observations made at some of our meetings on the subject under consideration were not in some way recorded. No doubt the presence of a reporter might have injurious effects in different directions, it might restrain some who had something to say, and might encourage others who *wished* to say something. But a short and authentic abstract, like that which is taken by some of our sister societies, might supply a want without developing any of the changes to be avoided.

This notice of the proceedings at our general meetings would be incomplete without some reference to the exhibits which generally precede the reading of the papers. During the past year we have had in this way brought under our notice important matters, and have had the opportunity of inspecting many new, rare, or otherwise interesting objects. In looking over the early records of the Society, I was not a little pleased to find that exhibits were no recent innovation. At the second general meeting of the Society, held on the 6th of May, 1788, when Sir James (then Dr.) Smith had completed the reading of his Discourse on the rise and progress of Natural History, it is recorded that Mr. Fairbairn, of Chelsea Gardens, "produced a *Vicia* and an *Astragalus* apparently new." Dr. Smith undertook to investigate their claims to novelty, and at a subsequent meeting he reported that the *Astragalus* was new, and described it as *A. leucophæus*. It is in accordance, then, with the earliest traditions of the Society, and I believe with its best interests, to encourage exhibits, though the time devoted to them must not encroach on that required for the full consideration of the memoirs that have been carefully prepared for, and that must always be the principal work of, the meeting.

Another evidence of our prosperity and of our usefulness is manifested in the unusual extent and importance of our publications. Our place in the commonwealth of science must mainly depend on the value of our Journal and Transactions. The high appreciation of the honour of connection with our Society by men of science abroad is no doubt based upon their estimate of the value of our work as testified to by our publications; it is accordingly most important that we should maintain their efficiency. During the past year the Proceedings and Journals of Botany and Zoology have consisted of 970 pages of letterpress illustrated with 43 plates and 199 woodcuts. Before completing the twenty-second volume of our Journal of Botany we have begun a new volume devoted to the Flora of China, of which two parts have been published, and in our Journal of Zoology three parts have been issued of the two extra volumes to be devoted to the results of Dr. Anderson's Exploration of the Mergui Archipelago. The Transactions issued during the year have contained 114 pages of letterpress illustrated with 23 plates and 8 woodcuts. The special volume devoted to Mr. Eaton's 'Monograph of the Ephemeridæ' will be completed with the next part now being pushed forward; while another separate volume devoted to Dr. Davidson's 'Monograph of the Recent Brachiopoda' has been begun, and may be expected to be completed without much delay.

The Society has expended the large sum of £1283 on its publications during the year. The average amount spent for this purpose during the previous ten years was £963. The illustrations necessarily absorb a large portion of this money; towards this expense a sum of about £100 has been contributed by or on behalf of the authors. The full illustration of our memoirs is of the first importance, and has always been a characteristic of the publications of the Society, although our funds have not always been able to meet the cost. The whole expense of the coppers and of engraving the plates for the first volume of the Transactions was defrayed by Sir Joseph Banks, and all through generous donors have frequently borne a portion of this heavy burden.

We are now proceeding with the 36th volume of the Transactions. The 23rd volume of the Journal of Botany and the 21st volume of the Journal of Zoology are in hand. Satisfactory indexes to these extensive publications are of the first importance to those who have occasion to consult them. One of the many great services that our late distinguished President, Mr. George Bentham, rendered to the Society was the preparation of the index to the first 25 volumes of the Transactions. I am glad that I am able to announce that a like service for the Journal of Botany is being rendered to the Society by our indefatigable Senior Secretary. Mr. Jackson has been for some time engaged in this work, which will include, besides the Journal, all the botanical references in the earlier volumes of the Proceedings of the Society.

The Library is another great means we possess of carrying out the objects of the Society in promoting biological science, and the necessity of maintaining it in full efficiency cannot be bequests to increase the capital of this most important fund. I hope that the action of the Council will meet with the cordial approval of, and a generous response from, the Fellows. The additions to the Library during the past year have been made at an expense of £140, and a further sum of £82 has been spent in binding. The Library has been further increased by gifts. As a memorial of our late Fellow, Mr. Arthur Grote, his daughter, Mrs. Stirling, generously presented 200 volumes, 100 pamphlets, and a number of maps. The Reports of the 'Challenger' Expedition have been presented by the Government; the Royal Society gave us 16 volumes from the duplicates in their library, which were desiderata in ours; and our Treasurer has presented to us several volumes. From Sir George MacLeay we have received a large collection of manuscripts and scientific correspondence formerly belonging to his father Alexander MacLeay, who was Librarian to our Society in the years 1796–7, and afterwards Secretary from 1798 till 1824. To various Fellows, authors, and publishers we are indebted for the presentation of numerous volumes. Through exchange the Library is largely increased by the publications of Scientific Societies over the world. So many years of great activity in the Library have passed since the catalogue was published that it now gives but a faint, I ought rather to say a misleading, notion of the value of the Library, and affords little help to the Fellows in consulting it. The preparation of a new catalogue for the press is hindered only by the heavy expense its production would entail, and the necessary alienation for this object of funds which would more accomplish the primary duty of the Society when devoted to the publication of original memoirs by its Fellows.

It has been found that the printed catalogue of the Library, in which the Linnean books are indicated by a prefixed old English capital L, does not contain a record of all the volumes in our possession which belonged to Linnæus. Dr. Murie is consequently engaged in the preparation of a complete catalogue of these volumes. He has also in hand the arranging the whole of the manuscripts and scientific correspondence of Linnæus, and though the work is far from complete, much benefit has already been derived from this important undertaking.

Our now extensive and valuable collection of portraits of naturalists has been added to by the gift of a water-colour portrait of the Rev. William Kirby, the entomologist, from Sir George MacLeay, and an oil-painting of Francis Masson, one of the early explorers of the vegetation of South Africa, and a Fellow of this Society elected in 1796, which I had the pleasure of securing for the Society. Mrs. Stirling presented a photograph of Dr. Stoliczka, the Indian naturalist; Mr. Fookes an engraving of T. A. Knight, a Fellow of this Society, and one of the founders of the Horticultural Society; and Mr. Crisp an engraving of Sir Richard Owen.

The collections we possess, though of the greatest value, happily cost nothing for their maintenance. As in other Societies, it was originally our purpose to form collections which would be useful to the Fellows, and would assist in the advancement of Science. But we have, with these Societies, arrived at the conclusion that with great institutions maintained by Government for the special purpose of acquiring and preserving objects of natural history, and freely accessible to every one, there is no advantage in maintaining small and imperfect collections. The cost of their preservation and the space they occupy is too great a price to pay for them. In 1863 the Society resolved to dispose of their general collections; some were presented to museums, and others were sold by auction, but all, I believe, became more serviceable to Science than when—hidden away and inaccessible—they remained in our possession. Now we have in our rooms the invaluable Linnæan collections, the Herbarium of Sir James Smith, the great Wallichian Herbarium, and the British Herbarium, with some other complete but less important collections. With one exception these are in the most satisfactory order, arranged in good cabinets, and requiring no outlay for their maintenance. The Linnæan Herbarium, still preserved in the cabinets which they occupied in Linnæus's study at Upsala, is arranged according to the 'Species Plantarum'; it has been rendered more easy of reference by placing on each shelf the numbers of the genera which are placed on it. The exception which I noted is the zoological collection of Linnæus. A Committee of Council has been examining into the state of this collection. On account of the nature of the objects, and because of the introduction of additional specimens by Sir James Smith, the somewhat unwise zeal, subsequently manifested, for putting some of the collections into new and neat order, and the overcrowded state of others, these collections require some attention. Steps are being taken to secure their better accommodation and their preservation, as far as it is possible, in the state in which they were acquired by the Society. This will be done at a small cost.

The revenue of the Society has been placed so clearly and fully before you by the Treasurer that it would be presumption in me to say anything whatever in regard to it. But as I have placed before you some details of the great spending departments—the publications and the library—let me press on you the importance of securing a suitable income to carry on the Society's work. This income must be derived mainly from the annual payments of the Fellows. The admission fees supply a somewhat regular revenue. They have averaged during the last five years £250 a year. This means that we have added on an average 42 members annually to the Society. The compositions are a more irregular source of income. In 1882 they amounted to £600, while in 1885 they yielded only £90. The number of compounders has, no doubt, been affected by the change in the amount of composition which was made nine years ago, when the sum was raised from £30 to £45, in stricter accordance with the actuarial value of the annual payments of the Fellows. We have at present on our roll 297 members who have compounded. For some years it has been the practice to invest one half of the compositions, and we have now, independent of the Bentham bequest, £5700 thus invested. If the estimate on which the present composition is based be correct, this sum is less than half what should be invested to cover our responsibilities to the compounders.

With the decrease in the compositions there has been a consequent increase in the annual payments. Twenty years ago the Members paying annually were 205, they now amount to 420; and the revenue from yearly payments has risen correspondingly with the Members from £603 in 1867 to £1280 in 1886. Another gratifying item in our revenue is the regularly increasing sum accruing from invested capital. In 1860 we had only £8 from this source, year by year it has been creeping up till last year we received £190.

It is plain, then, that if our work is to be maintained, and, yet more, if our usefulness is to be extended, we must secure a considerable annual addition to our roll. Our Society exists for the advancement of science, but its Members are not limited to proficients in biology. Were it so our Members and our usefulness would be curtailed. We welcome the friends and patrons of science—the lovers of nature. In their fellowship with us we hope to lead them on to a closer acquaintance with the studies we pursue. Their contributions will increase our means of usefulness. As science develops and our Society increases, the claims on our funds increase also.

Before another anniversary comes round we shall have completed the hundredth year of our existence. On the 26th of February, 1788, seven men met in the Marlborough Coffee House, Great Marlborough Street, and held the first meeting of the Linnean Society. Dr. Smith, the happy possessor of the Linnean collections and library, was placed in the chair, a position which he occupied for the long period of forty years. Dr. Goodenough, then living at Ealing, was elected Treasurer. He made a careful study of our British Carices, and published the results in a model monograph in the second volume of the Society's Transactions. In 1808 he was promoted to the Bishopric of Carlisle, which see he occupied till his death in 1827; and so late as 1880 his herbarium was presented by the civic authorities of Carlisle to Kew. Mr. Marsham was appointed Secretary. He was a distinguished entomologist, and communicated several papers to the Society which duly found place in the Transactions. Jonas Dryander, a distinguished pupil of Linnæus, and successor to Solander as Librarian to Sir Joseph Banks, was, at a subsequent meeting, appointed the first Librarian. James Dickson, a young gardener from Peebles, with a great love for botany and a critical knowledge of British mosses, was also present. He had prospered in business and had a shop in Covent Garden. Mr. Beckwith, an entomologist who described four new British moths at the meeting in March 1789, but was dead before the paper was published in 1794, and Mr. John Timothy Swainson, of H.M. Customs, and father of the illustrious zoologist, complete the number who were present at this first meeting. We seem now far separated from that meeting, yet I am happy to say that we have still with us Fellows who were admitted to the Society under its first President, and who connect us by a single link with that small meeting in the Marlborough Coffee House. The Rev. Leonard Blomefield was elected on the 19th November, 1822. I had reason to hope that we might have been honoured with his presence here to-day. Students two generations ago were familiar with his 'Manual of British Vertebrate Animals,' 1835. John B. Mackay, an accurate British botanist, elected in 1824, now enjoys a green old age at Totteridge, and Prof. Westwood, admitted May 1st, 1827 is still, and I trust may yet long be, an active scientific worker. I hope we may have the presence of these veterans when we celebrate our hundredth anniversary.

At the second meeting, held on the 18th of March, the roll of the original members of the Society was incorporated in the minutes. It consists of twenty names, and to it is added this note: "The Rev. John Lightfoot, F.R.S., was one of the institutors of the Society, but died a day or two after the first meeting."

From the foundation of the Society its meetings have been held twice a month; the first meeting in each month was confined to the Fellows, and was entirely devoted to business; the second, or general meeting, was open to Associates and visitors introduced by Fellows, and was held for reading memoirs and receiving exhibits.

The Society for many years possessed only a very modest income, beginning, in its first year, with a total of £65. But its expenses were also small. No publications for some time swallowed up its funds. It was content to occupy, for a modest rent, two rooms in Dr. Smith's house, No. 12 Great Marlborough Street. And it appointed the young and unfortunate Francis Borone its first officer, giving him the handsome salary of Five Guineas a year "for his attendance on the Society at all times."

Our centenary falls then on the 26th of February, 1888. On that day we shall be full one hundred years old. I venture to suggest that such an occasion should not be allowed to pass without some special celebration. The services we have, as a Society, rendered to biological science more than justify our right to exist. The story of the Linnean Society during the century is the history of Biology. That story would centre around three names which will ever be held in high honour by, I will not say all Linneans, but by all the world—the names, I mean, of our founder Sir James Edward Smith, of Robert Brown, and of Charles Darwin. These men represent the three great steps in Biological Science—the maintenance of the Linnean system, the philosophic illustration and establishment of the Natural System, and the study of the phenomena of life in the organism.

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## OBITUARIES.

**GEORGE FRENCH ANGAS** was born on the 25th April, 1822, in the county of Durham. Some years afterwards his family removed to Dawlish, in Devonshire; and it was there that he acquired as a boy that taste for collecting seaside specimens which ultimately developed into his love for conchology, the branch of natural history to which in after-life he especially directed his attention.

After being at various country schools he was finally sent to Tavistock for four years, and was then placed by his father in a business house in the city. Commercial pursuits were, however, distasteful to young Angas; and after a year or so of unpleasant drudgery, he determined to relinquish his uncongenial employment and see something of the world. His great ambition was to travel, and having a natural taste for drawing, he hoped to turn this talent to some account. His first trip was to Malta on board a small schooner which belonged to a relative. Taking passage in a native boat from Malta to Syracuse, he made his way to Etna, which he ascended, and, after rambling over Sicily, finally reached Messina, an exploit not without difficulty and adventure in those days, when the journey had to be made on a mule and the island was overrun with brigands. On his return home he published a description of his journey, entitled 'A Ramble in Malta and Sicily,' which was illustrated from his own sketches.

With a view to perfect himself as a draughtsman, he now studied anatomical drawing under Waterhouse Hawkins, and also learnt the methods of lithography. Then in 1843, at the age of twenty-one he sailed for South Australia—a colony at that time in its infancy. There he joined several of Capt. (now Sir George) Grey's expeditions, and made sketches in water-colours of the scenery, aborigines, and natural history of South Australia. He then proceeded to New Zealand, travelling over 800 miles on foot in the wildest regions, making many valuable sketches of the country, its inhabitants, their buildings, customs, &c. After an absence of more than three years Mr. Angas returned to England, and subsequently published his sketches in two imperial folio volumes, entitled 'South Australia Illustrated' and 'The New Zealanders Illustrated.' He also wrote an account of his travels under the title of 'Savage Life in Australia and New Zealand,' which was published in two volumes.

Still thirsting for fresh adventures, he started for South Africa, where he spent two years. He travelled through the Zulu country, working very hard and undergoing all sorts of hair-breadth escapes before reaching England again. The result of his labours was published in another imperial folio work, entitled 'The Kaffirs Illustrated,' several of the original drawings of which have since been purchased for the Print-Room Collection in the British Museum.

Soon afterwards he was appointed naturalist to the Turko-Persian Boundary Commission; but after a long series of delays in Turkey he was laid up with fever at Belgrade, and had to return home invalided.

In 1849 he married, and went out to South Australia again, the year before the "gold fever" broke out there. He accompanied one of the first parties to the Ophir diggings, and made many sketches of the gold-fields, which were sent home and published in London. He afterwards visited other diggings, and passed through many adventures in those wild first days of Australian gold. Finally settling down in Sydney, he obtained the appointment of Director and Secretary of the Government Museum there, a post which he held for more than seven years, during which time he made several journeys collecting and sketching. On his retirement he again returned to South Australia, and spent three years there, acting as magistrate, returning officer, and chairman of the District Council, before he finally returned to England with his wife and family.

Since then he resided in London until his death; ill-health, however, compelling him to winter abroad.

He was a Fellow of the Royal Geographical Society, and of the Zoological Society, of which he was Corresponding Member for over twenty years. He was elected a Fellow of this Society on the 3rd May, 1866.

He contributed a large number of papers on Mollusca, and several on Australian Mammals, to the Zoological Society, which are published in their 'Proceedings.' He of late years wrote tales of adventure and travels for various journals, and contributed sketches to the 'Graphic' and 'Illustrated London News.' He was also the author of a long series of articles on "Commercial Natural History," published in 'Colonies and India,' and of other minor works. He died on the 8th October, 1886.

**Christopher Edmund Broome** was born at Berkhampstead, on July 24, 1812, the son of Christopher Broome, a solicitor, and a niece of Lady Knightley of Fawesley, her maiden name being Seller.

When nine years of age, Mr. Broome was sent to school at Kensington under Dr. Jamieson, who removed to Heston near Hounslow a few months later, and there Mr. Broome remained until he was eighteen, in 1830. In this year he lost his father; two years later, he and his mother went to live at Chelsea, thence he went to be the pupil of the curate at Swaffham Prior in Cambridgeshire, with whom he read until he went up to the University. He was entered at Trinity Hall, Cambridge, October 23rd, 1832, and took his degree in January 1836. In the April following he married Charlotte Horman, fourth daughter of the Rev. John Bush, of Chelsea.

A few months after his marriage he removed to the neighbourhood of Bath, then for nine years at Clifton, where he became acquainted with Thwaites, afterwards of Peradeniya, and finally settled at Elmhurst, in November 1848, where he remained to the end of his life.

Mr. Broome's studies in Natural History began whilst he was reading for Holy Orders at Swaffham Prior, but were not fully prosecuted with steadfast and earnest aim until conscientious scruples had caused him to relinquish all intention of entering the Church. His services to local botany have been fully recounted by his life-long friend, the father of the Linnean Society, the Rev. Leonard Blomefield, in an address to the Bath Field Club, December 8th, 1886; whilst Mr. George Murray has testified in the current number of the 'Journal of Botany' to the esteem in which Mr. Broome's painstaking and accurate work is held by mycologists. During forty years he was closely associated with the Rev. M. J. Berkeley. Mr. Broome's last paper was published in our 'Transactions' after his death, which took place in London. He regularly visited his Essex property at stated times, and last November he was staying at Wood's Hotel, Furnival's Inn. On the evening of Friday, 12th November, after a tiring day in wet weather in Essex, he came back to his hotel as usual. Shortly after retiring, he received some distressing private intelligence, was seized with a paralytic attack, and did not resume consciousness, passing away at 11 P.M. on Monday, 15th November, 1886. He leaves a widow and family, the eldest being Vicar of Hurst, Twyford. Mr. Broome was elected a Fellow, February 1, 1866.

**Sir Charles James Fox Bunbury**, Bart., F.R.S., F.G.S., was born at Messina in the year 1809, and was the son of Sir Henry Bunbury by his first wife, a niece of Charles James Fox. He early acquired a love for Botany, for on leaving Trinity College, Cambridge, at the end of 1837, he went with Sir George Napier to the Cape for rare plants; the result being published in Hooker's 'Journal of Botany,' and in 1848 there appeared the 'Journal of a Residence at the Cape of Good Hope.' After his return, Mr. Bunbury, in 1844, married Frances, second daughter of Mr. Leonard Horner, and sister of Lady Lyell. This family connection with Sir Charles Lyell appears to have drawn much of his attention from Botany to Geology, and at one time he seriously thought of bringing out a new edition of Lindley and Hutton's 'Fossil Flora of Great Britain.'

Testimony to Sir C. Bunbury's attainments as a geologist will be found in Proc. Geol. Soc. (1887) pp. 39, 40. He was elected Fellow of our Society November 19, 1833, so that he was one of the oldest Fellows on our Roll. He contributed two botanical papers to our Journal, the earlier, on Madeira plants, being the first paper of the first volume of that publication. He died June 19, 1886.

**George Busk**, the second son of Mr. Robert Busk, of St. Petersburg, was born in 1807. He was educated for the medical profession, and on the completion of his studies gained the appointment of surgeon to the hospital-ship 'Dreadnought.' He held this post for twenty-five years, and discharged its duties in a manner which has placed him amongst the foremost members of his profession. In 1856 he resigned his appointment and retired from practice, for the purpose of devoting himself to scientific work. From that time until his death his contributions to Biology have been many and important.

His researches were mainly concerned with the lower forms of life, and it is with the Polyzoa that his name will always be specially associated, for not only was he the first to formulate a scientific arrangement of the group and to point out structural characters upon which a philosophical classification could be based, but his additions to our knowledge of the Polyzoa as a whole will justly rank amongst the classics of modern Natural History. His first important work on the Polyzoa appeared in 1856 as an article in the 'English Cyclopædia,' in which he gave an exhaustive account of the structure of the group. This was followed by an 'Illustrated Catalogue of the Polyzoa contained in the collection of the British Museum;' a 'Report on the Polyzoa and Hydroids collected during the voyage of H.M.S. Rattlesnake;' a 'Monograph of the Fossil Polyzoa of the Crag,' published by the Palæontographical Society; and, finally, a 'Report on the Polyzoa collected during the voyage of H.M.S. Challenger.' This was his last work, the concluding part being only finished just before his death, and he unhappily did not live to see the sheets through the press.

Mr. Busk's investigations were by no means confined to the lower forms of life. In 1864 he accompanied Dr. Falconer to investigate the caves of Gibraltar, and a monograph embodying their results was subsequently published. His other palæontological publications comprise papers on the dentition of fossil Bears, on the extinct species of Elephant collected by Captain Spratt in the ossiferous caverns of Zebbug in the island of Malta, a Report on the animal remains in the Brixham Cave, and a Report on the animal remains found by Captain Lane-Fox in the Terrace-Gravels at Acton and Turnham Green.

As an Ethnologist, Mr. Busk was no less distinguished. He formed one of a joint Commission of French and English *savants* which met for the purpose of investigating the delicate and now celebrated question of the authenticity of the discovery of a human jaw in the Gravel at Moulin Quignon, near Abbeville. He also contributed a number of important papers, chiefly on craniology, to the Anthropological Institute, of which body he was President in 1873 and 1874, and Member of Council from its foundation in 1871 until a short time before his death.

English science also owes to George Busk excellent translations of Steenstrup's celebrated memoir on the 'Alternation of Generations'; and, in conjunction with Prof. Huxley, of Kölliker's 'Manual of Human Histology.' About fifty papers are cited under his name in the Catalogue of the Royal Society, exclusive of those in association with other authors. In addition to these labours of personal investigation, he was for a time one of the editors of the 'Microscopical Journal' and of the 'Natural History Review.'

In recognition of his eminent services to the medical profession, he was elected President of the Royal College of Surgeons in 1871. He held for three years the Hunterian Professorship of Comparative Anatomy, and was one of the Trustees of the Hunterian Museum. He was a member of the Senate of the University of London, and for many years Treasurer of the Royal Institution of Great Britain; and was recently nominated one of the Governors of Charterhouse School. On the passing of the Cruelty to Animals Act, for the purpose of regulating the performance of vivisectional experiments, he was appointed by Government Inspector of the various Laboratories registered under that Act in England and Scotland, the duties of which he performed with great tact and broad-minded justice.

He was elected a Fellow of the Royal Society in 1850, was afterwards nominated one of the Vice-Presidents, and served on the Council on several occasions. For his researches in Zoology, Physiology, and Comparative Anatomy, a Royal Medal was awarded him in 1871. He was a Fellow of the Geological Society, and received from that body the Wollaston and the Lyell Medals in recognition of his palæontological researches. He was a Fellow of the Zoological Society; and was President of the Microscopical Society in 1848–49, and was also President of the Anthropological Society.

He was elected a Fellow of this Society on the 1st December, 1846, and held the office of Zoological Secretary from 1857 to 1868, the duties of which he discharged with zealous attention, and constantly exerted himself to promote the welfare of the Society. He served on the Council and was nominated Vice-

President on several occasions between the years 1869–1882. It was the unanimous wish of the Council that he should have accepted the Presidency of the Society; but the state of his health unfortunately prevented him from undertaking the duties incumbent on that post.

Mr. Busk died on the 10th August, 1886, in his seventy-eighth year. By his death the Society has lost a distinguished Fellow, and British Science an enthusiastic worker, who has left his mark on many fields of research.

**August Wilhelm Eichler** was born at Neukirchen in Hesse, on the 22nd April, 1839, the eldest son of his father, Johann Adam Eichler, and received his early education at Eschwege and Hersfeld. In 1857 he went to study at Marburg, giving special attention to Mathematics and Natural History, but ultimately, as the result of Wigand's lectures, devoting himself to Botany, and he chose as the subject of the thesis for his degree, "On Leaf-development, with special reference to the forms of bracts."

He intended entering the scholastic profession, but, on the recommendation of Buchenau and Wigand, he became in 1861 assistant to Martius at Munich, his special function being to help in the preparation of the 'Flora Brasiliensis.' This colossal work began to appear in 1840, then stopped until the present Emperor of Brazil, Don Pedro II., in 1852, gave it the support which it has since enjoyed. After the death of Martius, Eichler became sole editor, and, according to Dr. Garcke, under his care, 46 parts were issued out of a total of 100. For his services in this work, he was decorated with the third degree of the Brazilian order of the Rose. With Eichler's death we have to record the death of four editors of this noble work—Martius, Endlicher, and Fenzl being the others.

Dr. Eichler was Professor of Botany successively at Munich, Graz, Kiel, and Berlin, the last from Easter 1878. After Alexander Braun's death in 1877, the Chair of Botany in Berlin University was divided. Eichler was appointed to the Chair of Systematic and Morphologic Botany, in conjunction with the charge of the Royal Botanic Gardens and Museum; whilst Schwendener was chosen Professor of Plant-Anatomy and Physiology, and Director of the University Garden. In 1880 he was elected a Member of the Berlin Academy of Sciences, and in 1881 a Foreign Member of our Society. During the last few months of his life his strength and eyesight failed; and, after a painful illness, he died at Berlin, on 2nd March, 1887, and was buried 5th March.

The Garden at Berlin owes much to Eichler's energetic ad-water-plants. On the discontinuance of 'Linnæa,' Dr. Eichler began to publish his 'Jahrbücher des Königl. botanischen Gärtens,' of which one volume annually was intended to be issued, but the later issues have fallen behind, no doubt due to the Editor's illness.

Eichler's chief work is unquestionably his 'Bluethendiagramme,' Leipzig, 1875–78, and his editorship of the 'Flora Brasiliensis.' As a Professor, his lectures were much frequented, due to his clear and simple method and charm of delivery.

Sir Walter Elliot, the son of Mr. James Elliot of Wolflee, Hawick, N.B., was born at Edinburgh in 1805. He was educated at Doncaster and Haileybury, and, after leaving school with distinction, he entered the East-India Company's service in 1820. From 1822 to 1833 he held the post of Assistant to the Political Agent of the Southern Mahratta country, and in 1837 was private secretary to Lord Elphinstone, then Governor of Madras. He was subsequently for twelve years a member of the Madras Board of Revenue. From 1849 to 1854 he was Commissioner for the Northern Circars. Finally, from 1854 until his retirement from the service in 1859, he was Senior Member of Council in Madras.

His contributions to Zoology were numerous and valuable, and he may justly be ranked amongst those who laid the foundations of our present knowledge of the Fauna of British India. As a naturalist, Sir Walter Elliot was an observer and a collector rather than a writer. He contributed, however, to the 'Madras Journal of Science' for 1844 a "Catalogue of the Species of Mammalia found in the Southern Mahratta country," which is especially noteworthy on account of the record of his personal observation of the habits of the animals described, a number of which, comprising most of the smaller rodents, were discovered by himself. The British Museum has been enriched by numerous zoological collections made by him, and amongst these may be mentioned a valuable series of Cetacea, which formed the subject of a memoir by Sir Richard Owen, published in the 6th volume of the 'Transactions' of the Zoological Society.

In Botany, Sir Walter printed at Madras, in 1859, the 'Flora Andhrica,' viz. the plants of the Telugu Districts, a work of considerable local value as containing the vernacular and botanical names.

Sir Walter Elliot was a man of varied and extensive attainments, and was equally distinguished as an ethnologist, philologist, and numismatist. Indeed it will probably be considered that his most important literary contribution was a monograph of the Coins of Southern India, the publication of which was completed last year, notwithstanding the author's total loss of sight before the work was finished. He also contributed, during a number of years, many notes to the 'Indian Antiquary' and the 'Madras Journal of Literature and Science' on his favourite studies.

Sir Walter Elliot was created a K.C.S.I. in 1866; and was elected a Fellow of the Royal Society in 1878, and of this Society on the 20th January, 1859. He died somewhat suddenly on the 1st March, 1887, in his eighty-fifth year, at Wolflee, the residence of many generations of his ancestors. By his death the Society loses a genial and generous Fellow, one of the old school of Indian administrators, and a devoted student of Oriental learning.

**Arthur Grote** was born at Beckenham in 1814, the historian of Greece being an elder brother. He entered Haileybury College when seventeen years of age, remaining there until December 1833, when he passed out "highly distinguished," having taken prizes in Classics, Bengali, Persian, Hindustani, and Arabic. He reached India in June 1834, and was first appointed writer on the Bengal establishment in the Aligarh division, and afterwards assistant to the collector of Jessor. In 1839 he was stationed at Midnapur, and in 1845 transferred to Champarun as magistrate. In the next year he came to Europe on furlough, returning in 1849. From that period till his retirement in 1868 he filled various appointments; then, having spent more than thirty years of actual service in India, Mr. Grote came home, and spent the most of his time in London, until his death, 4th December, 1886. He took part in the work of many scientific societies; was elected Fellow of the Linnean Society 3rd November, 1846, and served more than once on the Council and as Vice-President. Mr. Grote published few scientific papers; but he possessed a good library, and many scarce volumes have been added to our collection since his death, by the generosity of his surviving daughter, Mrs. Stirling.

**Henry Fletcher Hance** was born on August 4th, 1827, in London, but, being delicate, he passed his early years at his grandfather's at Plymouth. When seventeen years old, in 1844, he was nominated to the Civil Service of Hongkong; and, ten years later, was transferred to the Superintendency of Trade in China. In December 1856, when the Foreign Factories were burned at Canton, he lost his books and collections, and returned to Hongkong. In 1859 he was ordered to Canton, but two years later he was moved to Whampoa as Vice-Consul. Here he remained for 17 years, when he took charge of the Canton Consulate from March 1878, at intervals lasting till May 1885. In September 1883 serious riots took place at Canton, and Dr. Hance feared for the safety of collections and library. He was appointed Acting Consul at Amoy in 1886, but only passed a few weeks at his new post, when he died suddenly on June 22nd, 1886, and was buried at Hongkong.

Dr. Hance's services to Botany are well known, his knowledge of Chinese plants was extensive and accurate, and in this special field he leaves no successor. It is to be deplored that no connected account of Chinese botany should have been drawn up by him, but the "Index Floræ Sinensis," now in course of publication in our Journal, vol. xxiv., by Messrs. Forbes and Hemsley, will act as gatherer of the widely scattered records. His herbarium is now part of the British-Museum collections, and his botanical and miscellaneous books are to be sold in London. He was twice married, and leaves a widow and young family to lament his loss. He became a Fellow of this Society 21st February, 1878.

**Arthur Edward Knox** was the son of Mr. John Knox, of Castlerea. After graduating at Oxford, he entered the 2nd Life Guards, but retired from the army on getting his troop. He married Lady Jane Parsons, eldest daughter of Lord Rosse.

Mr. Knox was an enthusiastic sportsman and a careful observer of the habits of animals. He devoted his attention especially to ornithology, and his collection of Sussex birds was exceedingly good and noted for the many rarities it contained. He was an accomplished writer on his favourite branch of Natural History. He contributed a series of articles to 'The Zoologist' on "The Birds of Sussex." These were followed by his more important works—'Ornithological Rambles in Sussex,' 'Game Birds and Wild Fowl: their Friends and Foes,' and 'Autumns on the Spey.'

He also took a great interest in Falconry, and was considered an authority on the literature and technicalities of that sport.

He died after a long illness, on the 23rd September, 1886, in his seventy-ninth year. He was elected a Fellow of this Society 6th June, 1848.

**Thomas Moore** was born at Guildford, on 21st May, 1821. After various situations as a gardener, he was chosen in 1848 curator of the garden of the Apothecaries' Company at Chelsea, vacant by Robert Fortune's resignation. In this he was re-elected annually thirty-seven times, whilst his duties were light enough to permit of his devoting a large share of his time to garden literature. He was one of the first men in this country to popularize ferns, and his 'Handbook of British Ferns' ran through several editions of increasing bulk. With Dr. Lindley, he published the sumptuous folio of 'Nature-printed British Ferns' in 1844; and he began an 'Index Filicum,' which was issued as far as letter G, but stopped when Mr. Pamplin, the publisher, retired from business. Mr. Moore's services as organizer and judge were much sought for horticultural exhibitions; whilst his knowledge of florist's varieties was special. Hence his value as assistant editor of the 'Gardeners' Chronicle,' from 1841 to 1881, his cooperation in Lindley and Moore's 'Treasury of Botany,' the article "Gardening" for the 'Encyclopædia Britannica,' which he undertook in conjunction with Dr. Masters, and as solely responsible for the 'Florist and Pomologist,' the last edition of Thompson's 'Gardener's Assistant,' and the like. After partial withdrawal from public work for the last two or three years, through impaired health, Mr. Moore died suddenly on 1st January, 1887, and was buried at Brompton Cemetery.

**Dr. Henry Munroe** died on the 4th January, 1887, in his sixty-eighth year, being at the time of his death one of the oldest medical practitioners in Hull. The son of a whaling-captain, he directed his attention to the study of the Cetacea, and was the author of a work on the 'History of the Greenland Fisheries.' He also contributed a memoir to the British Association at the Hull Meeting in 1853 on Statistics relative to the Northern Whale Fisheries from 1772 to 1852, in which he gave a full account of the rise and progress of that industry. For many years he took a great interest in the temperance movement.

He was elected a Fellow of this Society on the 5th May, 1859, and was a M.R.C.S. and L.S.A.

**Edwin Story** died on the 1st February, 1886, in his fifty-ninth year. He was educated at Shrewsbury School, and afterwards entered St. John's College, Cambridge, where he took a scholarship and ultimately graduated. He was a devout lover of scientific truth, and in Natural History devoted his attention especially to the study of entomology.

He was elected a Fellow of this Society on the 18th June, 1868, and was also a Fellow of the Geological, Astronomical, and Geographical Societies.

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By the death of **Isaac Anderson Henry**, Esq., of Hay Lodge, Trinity, Edinburgh, Horticulture has lost one of its most devoted cultivators and liberal patrons. During many years of a very long life he was a prominent representative in Scotland of a class of cultivators who occupy a position between that of a scientific botanist or horticulturist and a practical gardener, benefitting and being benefitted by both.

Mr. Anderson Henry was born in Caputh, Perthshire, at the beginning of the century, and was descended from the Andersons of Auchranie, who for several centuries held their land of the Crown on the payment of a white rose at Midsummer. He was educated for the Law, and for some years practised as a Solicitor before the Supreme Courts of Edinburgh, a profession which he abandoned on his accession to estates that brought him independence, at the same time requiring him to assume the name of Henry. The result of this change of circumstances was the enabling him to devote his life to Horticulture, a pursuit for which he had early developed a passion, and to the formation of a garden which as early as 1836 was known for the rarity of some of its contents, as was its owner for his liberality in promoting scientific horticulture. These were emphatically the days of Botanical Gardens in Great Britain, public and private, when, under the elder McNab, the Edinburgh Botanical Garden was the first in the United Kingdom, and when those of Liverpool, Edinburgh, and Glasgow, and of Glasnevin and Trinity

College, Dublin, were celebrated for their collections of curious and rare plants; whilst of private collections those of Dr. Patrick Neill, of Canon Mills, Edinburgh, of Dean Herbert at Spofforth near Manchester, and Mr. Anderson Henry, were amongst the best known at home and abroad. These kept up an active interchange of plants, and contributed largely to the earlier volumes of the 'Botanical Magazine,' 'Register,' and other periodicals.

Early in 1841 Mr. Anderson Henry was elected a Fellow of the Caledonian Horticultural Society, then no unworthy rival of the Royal Horticultural in the value of its labours. This probably gave that direction to his pursuits which lasted through life, especially his passion for hybridizing and his attempts to formulate the conditions required for the successful raising of plants from seeds, cuttings, &c. In an early volume of that Society's publications he contributed a paper on the necessity of allowing the free access of air to the roots of growing plants, illustrating this by cuttings struck in water the surface of which was alternately exposed to the air or protected from it; and he proceeded to show the injurious effects of covering the roots of trees by flagstones and other materials impervious to air. It was not till late in life that Mr. Anderson Henry published any of the results of his experiments upon hybridization, being incited thereto, we believe, through a correspondence with Mr. Darwin. He had, however, for upwards of forty years been actively engaged in crossing plants; and it is characteristic of his modesty and singleness of purpose that, whilst never obtruding himself before the public as an experimenter, his methods and the results of his labours were alike at the disposal of every enquirer and cultivator, and were largely adopted by nurserymen and practical gardeners, with whom his name was a household word in Scotland. To enumerate his successes and his no less instructive failures would be out of place; the former are in one instance commemorated by the *Veronica Andersonii*, a hybrid between two New-Zealand species, *V. speciosa* and *V. salicifolia*, which has become one of the most popular of conservatory and half-hardy plants, though of so old a date that few now connect its name with that of the veteran who was the author of its being. Other genera to which he devoted much attention, and in which he was most successful, were *Campanula*, *Clematis*, *Primula*, and especially *Rhododendron*, in which genus he was the first to recognize the prepotency of the pollen of the short stamens in each flower. Of his published papers on the subject of Hybridization, the most important is that in the ninth volume of the Transactions of the Botanical Society of Edinburgh, and which has been highly appreciated by practical horticulturalists for its suggestions and directions.

three in particular: the Andes of Ecuador, the North-western Himalayas, and New Zealand.

In the Andes he had an indefatigable correspondent in the late venerable Professor Jameson of Quito, who devoted a life-time to the botanical exploration of the Andes of Ecuador and Colombia, and especially of their loftier regions. For many years Prof. Jameson had at intervals sent seeds of alpine Andean plants to both English and Scotch gardeners; but owing to their detention in the hot damp port of Guyaquil and the long subsequent voyage, these rarely arrived alive. When, however, the Isthmus of Panama was traversed by the rail, and by means of swift steamers the passage from New Grenada to England was rendered comparatively short, Mr. Anderson Henry urged his friend to repeated trials, the result of which and of the skill employed at the garden at Hay Lodge was that a great many half-hardy Andean plants were for the first time introduced into Europe in a living state. Of these it is sufficient to specify the genera *Fuchsia*, *Calceolaria*, *Draba*, *Salvia*, *Tacsonia*, and various *Melastomaceæ*.

In the North-western Himalaya Mr. Anderson Henry's correspondents were relatives of his own; and to them we owe various species of *Primula*, *Androsace*, *Morina*, *Salvia*, *Gentiana*, *Dracocephalum*, &c. To him, too, we owe the raising of the giant Primula, *P. prolifera* (*P. imperialis*, Jungh.), from seeds sent by Mr. Elwes from the Sikhim Himalaya, a single plant alone having survived out of the whole batch of sixty-seven!

Perhaps, however, the most remarkable of the many novelties raised at Hay Lodge were the New-Zealand plants, which also were collected by relatives of his own; and chief amongst these were the Veronicas, of which the forms, both shrubby and herbaceous (*Lyallii*, *pinguifolia*, *salicornioides*, *Traversii*, &c.), were totally unlike any thing previously seen in cultivation, and as grown together in a large frame in his garden presented a most singular appearance; for no one acquainted with the European Speedwells would, without proof by flower, imagine that these were their congeners.

It remains to add that Mr. Anderson Henry was as highly esteemed as a man as he was as a horticulturalist; he was a genial companion with a fund of dry humour, and liberal in all relations of life. He was twice married; his first wife being Margaret Johnston, who died in 1857; by her he had two children, James, who died about 1856, and a daughter who died in infancy. Some years after he married Jessie, daughter of the late Laurence Brown, Esq., of Broughty Ferry; she took the name of Henry on succeeding to the estates of Woodend, Perthshire, as heiress of entail. When considerably upwards of eighty, though still possessed of all his faculties, he was struck with apoplexy; and, after lingering some months, died amongst his plants, which were daily brought to his room for his inspection, on the 21st September, 1884.

He was a Fellow of the Caledonian Horticultural Society, of the Royal and Botanical Societies of Edinburgh; and at one time was President of the latter. He was elected a Fellow of the Linnean Society in 1865. [J. D. H.]

## DONATIONS TO LIBRARY, 1886–87.

### Volumes and more important pamphlets, exclusive of exchanges, chiefly from private individuals.

Agardh, J. G. Till Algernes Systematik. VIII. Siphoneæ. 4to. Lund, 1887. **Author.**

Ährling, E. Om Karl von Linné. 8vo. Stockholm, 1885. Vita Caroli Linnæi. **Author.**

Alberti, Dr. A. Del modo di conoscere i funghi mangerecci. 4to. Milano, 1829. **F. Crisp.**

Albrecht, Prof. P. (1) Ueber die cetoide Natur der Promammalia. 8vo. 1886.—(2) 59. Vers. deutscher Naturforscher und Aerzte zu Berlin. Aus der Sektion für Anatomie. 8vo. 1886.—(3) Verläuft der Nervenstrom in nicht geschlossener, oder geschlossener Strombahn, und wie gelangt er, wenn letzteres der Fall ist, zum Sitze der elektromotorischen Kraft zurück? 8vo. 1887.—(4) Anatomische Schriften. 8vo. 1886. **Author.**

Allen, Dr. T. F. Characeæ of America. Parts 1 & 2. 4to. Boston, 1881? **Arthur Bennett.**

Almanack Severn Fishery District. 8vo. Gloucester, 1887. **J. Willis Bund.**

Anderson, Dr. John. Guide to Calcutta Zoological Gardens. 8vo. Calcutta, 1883. (A. Grote's Library.) **Mrs. Stirling.**

Anderson, Dr. Thomas. Catalogue of Seeds collected in Botanical Gardens, Calcutta. 8vo. Calcutta, 1866. (A. Grote's Library.) **Mrs. Stirling.**

Annals and Magazine of Natural History. 5 ser. Vols. xvii., xviii. 8vo. Lond., 1886. **Dr. W. Francis.**

Archivos do Museu Nacional. Vol. vi. 4to. Rio de Janeiro, 1885. **Govt.**

Argus? Was Adam the First Man Created? 8vo. Lond., 1879? (A. Grote's Library.) **Mrs. Stirling.**

Arnold, Dr. F. (1) Lichenologische Ausflüge in Tirol. 8vo. Wien, 1887.—(2) Lichenologische Fragmente. 8vo. Regensburg, 1887. **Author.**

Athenæum. Parts, July 1886 to July 1887. 4to. Lond., 1886. **Editor.**

Atkinson, E. T. Notes on Indian Rhynchota. No. 6. 8vo. Calcutta, 1886. **Author.**

Azara, Dom Felix de. Natural History of the Quadrupeds of Paraguay and the River La Plata. Engl. Transl. by W. P. Hunter. Vol. i. 8vo. Lond., 1838. **Dr. J. Murie.**

Babington, C. Catalogue Birds of Suffolk. 8vo. Lond., 1884–86. **Author.**

Baikie, Dr. W. B., and R. Heddle. Historia Naturalis Orcadensis, Zoology. Part 1. 8vo. Edinb., 1848. (A. Grote's Library.) **Mrs. Stirling.**

Baker, J. G. (1) Botany of the Cumberland Border Marches. 8vo. Lond., 1886.—(2) On Kew Gardens and some of the Botanical Statistics of the British Possessions. 8vo. Lond., 1886.—(3) Synopsis of the Rhizocarpeæ. 8vo. Lond., 1886. **Author.**

Balfour, Dr. E. Agricultural Pests of India. 8vo. Lond., 1887. **Author.**

Ballenstedt. Die Urwelt. Abth. 1–3. 8vo. Quedlinburg und Leipzig, 1818. **N. Hanhart.**

Bastian, Dr. H. C. Modes of Origin of Lowest Organisms. 8vo. Lond., 1871. (A. Grote's Library.) **Mrs. Stirling.**

Bastow, R. A. Mosses of Tasmania. 8vo. Hobart, 1886. **Author.**

Battarra, A. J. Fungorum Agri Ariminensis Historia. 4to. Faventiæ, 1755. **F. Crisp.**

Batten, J. H. Notes and Recollections on Tea Cultivation in Kumaon and Gurhwal. 8vo. Lond., 1877. (A. Grote's Library.) **Mrs. Stirling.**

Beale, E. J. English Tobacco Culture. 8vo. Lond., 1887. **Author.**

Beavan, R. C. (1) Avifauna of the Andaman Islands. 8vo. Lond., 1867.—(2) The Birds of India. 8vo. Calcutta, 1865. (A. Grote's Library.) **Mrs. Stirling.**

Beccari, Odoardo. Malesia. Vol. iii. fasc. 1, 2. 4to. Firenze, 1886. **Author.**

Beddard, F. E. Report on the Isopoda, 'Challenger' Exped. (2nd pt.). 4to. Lond., 1886. **Author.**

Beeby, W. H. On the Flora of Shetland. 8vo. Perth, 1887. **Author.**

Belcher, Capt. Sir Edward. Narrative of Voyage round the World, in H.M.S. 'Sulphur,' during 1836–1842. 2 vols. 8vo. Lond., 1843. **Dr. J. Murie.**

Bennett, Arthur. (1) First Report of the Botanical Sub-Committee. 8vo. Lond., 1878.—(2) On Occurrence of *Carex salina*, Wahlnbg., *β. Kattegatensis*, Fries, in Scotland, 1885.—(3) Additional Records of Plants from Scotland. 8vo. 1886.—(4) On *Calamagrostis strigosa* (Hartman) as a British Plant, and two *Carex* Forms new to Scotland, &c.—(5) *Carex helvola*, Blytt, in Scotland. 8vo. Edinb., 1886. **Author.**

Bennett, A. W. Freshwater Algæ (including Chlorophyllaceous Protophyta) of North Cornwall; with descript. of six new species. 8vo. Lond., 1887. **Author.**

Bennie, J., and R. Kidston. On the Occurrence of Spores in Carboniferous Formation of Scotland. 8vo. Edinb., 1886. **R. Kidston.**

Bentham, G. Handbook of the British Flora, ed. by Sir J. D. Hooker. 5th ed. 8vo. Lond., 1887. **Sir J. D. Hooker.**

Berce, —. Catalogue Méthodique des Lépidoptères d'Europe. 8vo. Paris, 1861. **Dr. J. Murie.**

Bibliotheca Historico-Naturalis. 36 Jahrg. 1 & 2 Heft. 8vo. Göttingen, 1886. **F. Crisp.**

Biddulph, Major J. Tribes of the Hindoo Koosh. 8vo. Calcutta, 1880. (A. Grote's Library.) **Mrs. Stirling.**

Blainville, M. H. Ducrotay. Mémoire sur les Bélemnites, considérées zoologiquement et géologiquement. 4to. Paris, 1827. **Royal Society.**

Blomefield, Rev. L. (1) Address to Members Bath Field Club, in reference to Death of C. E. Broome. 8vo. Bath, 1887.—(2) Further Results of Meteorological Observations. 8vo. Bath, 1887. **Author.**

Blow, Thos. B. A Bee-Keeper's Experience in the East. 8vo. Welwyn, Herts, 1887. **Author.**

Blyth, Edw. Natural History of the Cranes. 8vo. Lond., 1881. (A. Grote's Library.) **Mrs. Stirling.**

Boletim do Sociedade Broteriana. IV. fasc. 1, 2. 4to. Coimbra, 1886. **Prof. J. A. Henriques.**

Bonney, Prof. T. G. Anniversary Address, Geological Society. 8vo. Lond., 1886. **Dr. J. Murie.**

Bornet, Dr. Ed. Notice sur L. R. Tulasne. 8vo. Paris, 1887. **Author.**

Boulenger, G. A. Catalogue of Lizards in British Museum. 2nd ed. Vol. iii. 8vo. Lond., 1887. **Trustees Brit. Mus.**

Boulger, Prof. G. S. On the Connection in Time of Changes in Fossil Floras with those of Faunas. 8vo. Lond., 1886. **Author.**

Bourne, G. C. On the Island of Diego Garcia of the Chagos Group. 8vo. Lond., 1886. **Author.**

Bowman, F. H. (1) Report on Wools. 8vo. ?—(2) Variations in Structure of Wool and other Allied Fibres. 8vo. Edinb., 1886. **Author.**

Braithwaite, Dr. R. The British Moss-Flora. Parts 9 & 10. Roy. 8vo. Lond., 1887. **Author.**

Brander, Gustavo. Fossilia Hautoniensia collecta, et in Musæo Britannico deposita, a G. B. 4to. Lond., 1766. **Royal Society.**

Brazier, J. (1) Notes on Recent Mollusca found in Port Jackson and Coast of N.S. Wales and other Localities (1880).—(2) Critical List of Mollusca from N.W. Coast of Australia (1884).—(3) List of Cypræas found in Moreton Bay, Queensland, 1879.—(4) Synonymy of Australian and Polynesian Land and Marine Mollusca, 1883.—(5) Remarks on some Fluviatile Shells of New S.

Wales, 1882.—(6) New Species of Land- and Freshwater Mollusca from Maclay Coast and Triton Bay, New Guinea; and nine other Pamphlets. **Author.**

Brillantowski, Sam. De Animi Affectuum in Motus Musculares Involuntarios Efficacitate. 8vo. Berolini, 1846. (A Grote's Library.) **Mrs. Stirling.**

Britten, J. William Williamson Newbould. A Memoir. 8vo. Lond., 1886. **Author.**

Britten, J., and R. Holland. Dictionary of English Plant-Names. Pt. 3. 8vo. Lond., 1886. **J. Britten.**

Broun, Capt. T. Manual of New Zealand Coleoptera. Parts 3 & 4. 8vo. Wellington, N.Z., 1886. **Govt. N.Z.**

Brown, J. C. School of Forest-Engineers in Spain. 8vo. Edinb., 1886. **Sir J. Lubbock.**

Bund, J. W. Willis. Salmon Problems. 8vo. Lond., 1885. **Author.**

Burnes, Lord. Zoology of Afghanistan. Drawings. fol. (A. Grote's Library.) **Mrs. Stirling.**

Burrell, A. Indian or Chinese Tea. A Controversy with Mr. J. C. Sillar and others. 8vo. Lond., 1878. (A. Grote's Library.) **Mrs. Stirling.**

Busk, G. On the Caves of Gibraltar in which Human Remains and Works of Art have been found. 8vo. Lond., 1864. (A. Grote's Library.) **Mrs. Stirling.**

Butler, A. G. Lepidoptera Heterocera in the British Museum. Part iv. 4to. Lond., 1886. **Trustees Brit. Mus.**

Buysman, M. Nature, Climate, and Vegetation of the Arctic Region. MS., Middelburg, 1886. **Author.**

Cairns, J. Practical Treatise on Growing and Curing Tobacco in Ireland. 8vo. Dublin, 1886. **Dr. Masters.**

Canadian Economics. 8vo. Montreal, 1885. **Govt. of Canada.**

Candolle, C. de. Sur une Monstruosité du *Cyclamen neapolitanum*. 4to. Genève, 1887. **Author.**

Carter, H. J. Geological Papers on Western India, including Cutch, Sinde, and S.E. Coast of Arabia. 8vo. Bombay, 1857. (A. Grote's Library.) **Mrs. Stirling.**

Caspary, Prof. R. (1) Einige fossile Hölzer Preussens. 4to. Königsberg, 1887.—(2) Einige neue Pflanzenreste aus dem samländischen Bernstein. 4to. Königsberg i/Pr., 1886.—(3) Trüffeln und trüffelähnliche Pilze in Preussen. 4to. Königsberg i/Pr., 1887. **Author.**

Castle, L. Orchids: their Structure, History, and Culture. 8vo. Lond., 1886, **Author.**

Chambers, R. Vestiges of the Natural History of Creation. 10 ed. 8vo. Lond., 1853. (A. Grote's Library.) **Mrs. Stirling.**

Cheltenham Natural Science Society. Session 1885–86. 8vo. Cheltenham, 1887? **Dr. F. Day.**

Chenu, Dr. J. C. Notice sur le Musée Conchyliologique de M. le Baron Benj. Delessert. 8vo. Paris, 1844. (A. Grote's Library.) **Mrs. Stirling.**

Christy, T. New Commercial Plants and Drugs. Nos. 9 & 10. 8vo. Lond., 1886–87. **Author.**

Clarke, C. B. Compositæ Indicæ. 8vo. Calcutta, 1876. (A. Grote's Library.) **Mrs. Stirling.**

Cobbold, Dr. T. The Lung Parasites of Cattle and Sheep, with Report on Experiments. 8vo. Lond., 1886. **Mrs. Cobbold.**

Cole, A. C. Studies in Microscopical Science. Sect. I. no. 9, vol. iv. 8vo. Birmingham, 1887. **Editor.**

Conder, F. R. Iron Process, for Dealing with Sewage. 8vo. Guildford, 1886. **Author.**

Conwentz, Dr. H. Flora des Bernsteins. Band ii. 4to. Danzig, 1886. **Author.**

Dattari, P. Remarks on the New Australian Beetle, *Phalacrognathus Muelleri*. 8vo. Melbourne, 1886. **Baron Ferd. von Mueller.**

Davy, Sir Humphry. Salmonia; or Days of Fly-fishing. 8vo. Lond., 1851. (A. Grote's Library.) **Mrs. Stirling.**

Dawson, Sir J. W. (1) Fossil Plants of Laramie Formation of Canada. 4to. Montreal, 1886.—(2) On Rhizocarps in the Erian (Devonian) Period in America. 8vo. Chicago, 1886. **Author.**

Delessert, A. Souvenirs d'un Voyage dans l'Inde, 1834–1839. 8vo. Paris, 1843. (A. Grote's Library.) **Mrs. Stirling.**

Delpino, Prof. F. (1) Il Materialismo nella Scienza. 8vo. Genova, 1886.—(2) Teoria Generale della Tillotassi. 8vo. Genova, 1883. **Author.**

De Man, Dr. J. G. Anatomische Untersuchungen über frei lebende Nordsee-Nematoden. fol. Leipzig, 1886. **Author.**

——. Die frei in der reinen Erde und im süssenwasser lebenden Nematoden der Neiderländischen Fauna. fol. Leiden, 1884. **Mrs. Cobbold.**

Dent, H. C. A Year in Brazil. 8vo. Lond., 1886. **Author.**

Desmoulins, A. Anatomie des Systêmes Nerveux des Animaux à Vertébres. Vols. i., ii. 8vo. Paris, 1825. **Royal Society.**

Douglas, J. W. The World of Insects. 8vo. Lond., 1856. (A. Grote's Library.) **Mrs. Stirling.**

Dresser, C. Unity in Variety. 8vo. Lond., 1859. **F. Crisp.**

Dresser, Henry E. List of European Birds. 8vo. Lond., 1881. (A. Grote's Library.) **Mrs. Stirling.**

Druce, G. C. The Flora of Oxfordshire. 8vo. Oxford and Lond., 1886. **Author.**

Dumaine, C. J. (1) Remarks on the Wild Silk-yielders found in the Hazareebaug District. 8vo. 1886.—(2) Notes on the Tusser-Seed Cocoon (*Antheræa mylitta*), and some Symptoms of the Disease of its Larvæ. 8vo. Hazareebaug, 1886. **Author.**

Duthie, J. F. Illustrations of the Indigenous Fodder-Grasses of the Plains of North-western India. fol. Roorkee, 1886. **Author.**

Du Val, J., et Jules Migneaux. Genera des Coléoptères d'Europe. Vol. iii. 8vo. Paris, 1859–63. (A. Grote's Library.) **Mrs. Stirling.**

Edwards, Dr. W. F. De l'Influence des Agens Physiques sur la Vie. 8vo. Paris, 1824. **Royal Society.**

Elliot, W. Flora Andhrica, a Vernacular and Botanical List of Plants commonly met with in Telugu Districts of Northern Circars. Part I. 8vo. Madras, 1859. (A. Grote's Library.) **Mrs. Stirling.**

Ellis, Rev. W. Three Visits to Madagascar, 1853–1854–1856. 8vo. Lond., 1859. (A. Grote's Library.) **Mrs. Stirling.**

Entomologist. Vol. xix. 8vo. Lond., 1886. **T. P. Newman.**

Entomologists' Monthly Magazine. Vol. xxiii. 8vo. Lond., 1886–87. **Editors.**

Ernst, Dr. A. (1) Eine Botanische Excursion auf der Insel Margarita. 1886.—(2) Ein zweites Beispiel eines pathologischen Taca-Schädels.—(3) Ethnographische Mittheilungen aus Venezuela. 8vo. Berlin, 1886.—(4) La Exposicion Nacional do Venezuela en 1883, obra escrita de Orden del Ilustre Americano General Guzman Blanco. Tome I., texto. roy. 8vo. Caracas, 1886. **Author.**

Espeut, W. B. The Most Effective and Practical means of Ameliorating and Extending the Agricultural and Productive Capabilities of Jamaica. 8vo. Jamaica, 1886. **Author.**

Essex Naturalist. Journal Essex Field Club. Nos. 1–6. 8vo. Buckhurst Hill, 1887. **Club.**

Etheridge, R., Jun., and P. H. Carpenter. Catalogue of Blastoidea in Geol. Department of British Museum. 4to. Lond., 1886. **Trustees Brit. Mus.**

Fabricius, Joh. Christ. Genera Insectorum. 8vo. Chilonii [1776.] **Royal Society.**

Ferguson, W. The Vascular Cryptogams of Ceylon. 8vo. Colombo, 1886. **Author.**

Fischer, Dr. L. Flora von Bern. 8vo. Bern, 1863. (A. Grote's Library.) **Mrs. Stirling.**

Fletcher, L. Introduction to the Study of Meteorites. 8vo. Lond., 1886. **Trustees Brit. Mus.**

Flower, W. H. General Guide to the British Museum (Natural History), Cromwell Road, London, S.W., with Plans and a View of the Building. 8vo. Lond., 1887. **Trustees Brit. Mus.**

Flüggé, D. Joanne. Graminum Monographiæ. Pars 1. 8vo. Hamburgi, 1810. **Rev. G. Wilson.**

Forbes, Dr. S. A. Arsenical Poisons for the Codling Moth. 8vo. Springfield, Ill., 1887. **Author.**

Ford, Chas. Report on Botanical Afforestation Department for 1886. fol. Hong Kong, 1887. **Author.**

Ford, Chas., Ho Kai, and W. E. Crow. Notes on Chinese Materia Medica. 8vo. Hong Kong, 1887. **C. Ford.**

Forskål, Petrus. (1) Descriptiones Animalium, Avium, Amphibiorum, Piscium, Insectorum, Vermium. 4to. Hauniæ, 1775.—(2) Flora Ægyptiaco-Arabica. 4to. Hauniæ, 1775. **Royal Society.**

Forster, A. South Australia, its Progress and Prosperity. 8vo. Lond., 1866. (A. Grote's Library.) **Mrs. Stirling.**

Fowler, Rev. W. W. The Coleoptera of the British Islands. Parts 1–8. 8vo. Lond., 1887. **F. L. Soper.**

Francis, F., and A. W. Cooper. Sporting Sketches with Pen and Pencil. 4to. Lond., 1878. (A. Grote's Library.) **Mrs. Stirling.**

Fraser, Alex. Natural History of the Salmon, Herring, Cod, Ling, &c. 8vo. Inverness, 1833. (A. Grote's Library.) **Mrs. Stirling.**

Friedländer und Sohn, R. (1) Bibliotheca Historico-Naturalis et Mathematica. 8vo. Berlin, 1886.—(2) Naturæ Novitates, for 1886. 8vo. Lond., 1886. **Authors.**

Garden. Vols. xxix., xxx. 4to. Lond., 1886–87. **W. Robinson.**

Gardeners' Chronicle. Vols. xxv., xxvi. 4to. Lond., 1886–87. **Editor.**

Gardner, J. Starkie. (1) Fossil Grasses. 8vo. Lond., 1886.—(2) Second Report of Committee on the Fossil Plants of the Tertiary and Secondary Beds of the United Kingdom. 8vo. Lond., 1886. **Author.**

Geddes, P. (1) A Synthetic Outline of the History of Biology, 1886.—(2) Theory of Growth, Reproduction, Sex, and Heredity. 1886.—(3) On the Nature and Causes of Variation in Plants. 1886. 8vo. Edinb., 1886. **Author.**

Gennoe, T. A. M. Notes on the Cultivation of Poppy. 8vo. Benares, 1861. (A. Grote's Library.) **Mrs. Stirling.**

Geologists' Association. August 2nd to 7th. 8vo. Lond., 1886. **Association.**

Gibson, R. J. Harvey. (1) Report on the Vermes.—(2) Notes on some of the Polychæta.—(3) On a New Species of *Sycandra*. 8vo. Liverpool, 1886. **Author.**

Gilbert, Prof. J. H. (1) Remarques sur la Relation qui existe entre les Sommes de Température et la Production Agricole. 8vo. Genève, 1886.—(2) Results of Experiments at Rothamsted on the Growth of Barley. 8vo. Cirencester, 1886. **Author.**

Goode, G. Brown. Presidential Address. The Beginnings of Natural History in America. 8vo. Washington, 1886. **Author.**

Gory, H., and A. Percheron. Monographie des Cétoines. 8vo. Paris, 1833. (A. Grote's Library.) **Mrs. Stirling.**

Gosse, P. H. (1) Birds of Jamaica. 8vo. Lond., 1847.—(2) Natural History. Mammalia. 8vo. Lond., 1848. (A. Grote's Library.) **Mrs. Stirling.**

Gray, Prof. Asa. (1) Botanical Contributions, 1886–87. 8vo. Boston, 1886–87. —(2) Contributions to American Botany. 8vo.—(3) *Delphinium*, an attempt to distinguish the North-American Species. 8vo.—(4) Memorial of Edward Tuckerman. 8vo. 1886. **Author.**

Grieve, Dr. John. On the Pagoda Stone of the Chinese (*Orthoceras*, sp.). 8vo. Glasgow, 1887. **Author.**

Günther, A. Guide to Galleries of Reptiles and Fishes in Depart. Zoology of British Museum. 8vo. Lond., 1887. **Trustees Brit. Mus.**

Haddon, A. C. Introduction to the Study of Embryology. 8vo. Lond., 1887. **Publisher.**

Hart, H. C. Botany of Sinai and South Palestine. 4to. Dublin, 1885. **Author.**

Hart, J. H. A Botanist's Ramble in Central America; or a Trip to the Mainland. 8vo. Jamaica, 1886. **Author.**

Harting, J. E. Fauna of the Prybilov Islands. 8vo. Lond., 1875. (A. Grote's Library.) **Mrs. Stirling.**

Hartlaub, Dr. Clemens. Beiträge zur Kenntniss der Manatus-Arten. 8vo. Jena, 1886. **Dr. J. Murie.**

Harvie-Brown, J. A. Capercaillie in Scotland. 8vo. Edinb., 1879. **Dr. Cleghorn.**

Hayter, H. H. Victorian Year-Book for 1885–86. 8vo. Melbourne, 1886. **Govt. of Victoria.**

Heape, Walter. Preliminary Report on the Fishing Industry of Plymouth. 8vo. **Author.**

Hector, Dr. J. Handbook of New Zealand. 4th ed. 8vo. Wellington, 1886. **Author.**

Hemsley, W. Botting. Catalogue of Marianne North's Paintings of Plants and their Homes, Royal Gardens, Kew. 4th. ed. 12mo. Lond., 1886. **Author.**

Henderson, E. Iceland, or the Journal of a Residence in that Island during 1814–1815. 2 vols. 8vo. Edinb., 1818. **Dr. J. Murie.**

Henslow, Rev. G. The Theory of Evolution of Living Things. 8vo. Lond., 1873. **Dr. J. Murie.**

Hermann, J. Observationes Zoologicæ. 4to. Argentorati, 1804. **J. O. Westwood.**

Hinde, Dr. G. Jennings. (1) On Beds of Sponge-Remains in Lower and Upper Greensand of South of England. 4to. Lond., 1885.—(2) On the Genus *Hindia*, Duncan, and the name of its Typical Species. 8vo. Lond., 1887. **Author.**

Hobkirk, Chas. P. Synopsis of British Mosses. 2nd ed. 8vo. Lond., 1884. **Author.**

Hoefer, F. Histoire de la Zoologie. 8vo. Paris, 1873. **K. Cornish.**

Hoffmann, Prof. H. Beobachtungen über thermische Vegetations-Constanten. 8vo. 1886. **Author.**

Hooker, Sir J. D. Flora of British India. Part xiii. 8vo. Lond., 1886. **India Office.**

Hügel, C. Freiherr von. Kaschmir und das Reich der Siek. Bd. iv. 8vo. Stuttgart, 1844. (A. Grote's Library.) **Mrs. Stirling.**

Hull, E. C. P. Coffee; its Physiology, History, and Cultivation. 8vo. Madras, 1865. (A. Grote's Library.) **Mrs. Stirling.**

Humboldt, F. H. A., et (Aimé) Bonpland. Plantæ æquinoctiales. Tome i. fol. Parisiis, 1805.

——, ——. Observations de Zoologie et d'Anatomie Comparée. Vols. i.; ii. imperfect. 4to. Paris, 1811–33. **Royal Society.**

Hume, Allan. (1) My Scrap-Book; or Rough Notes on Indian Oology and Ornithology. 8vo. Calcutta, 1869.—(2) Stray Feathers. Vols. i.–ix. 8vo. Calcutta, 1873–83. (A. Grote's Library.) **Mrs. Stirling.**

Huxley, Prof. T. H. (1) On the Classification and Distribution of the Alectoromorphæ and Heteromorphæ. 8vo. Lond., 1868.—(2) On the Classification of Birds. 8vo. Lond., 1867. (A. Grote's Library.) **Mrs. Stirling.**

Irby, Hon. Chas. L., and Jas. Mangles. Travels in Egypt and Nubia, Syria, and the Holy Land. 8vo. Lond., 1844. (A. Grote's Library.) **Mrs. Stirling.**

from the Gayton Boring, Northamptonshire, 1886.—(2) Fourth Report of the Committee on the Fossil Phyllopoda of the Palæozoic Rocks. 8vo. Lond., 1886.—(3) Fringed Ostracoda from Carboniferous Series. 8vo. Lond., 1886.—(4) List of the Genera and Species of Bivalved Entomostraca found in the Carboniferous Formations of Great Britain and Ireland, with Notes on the Genera and their Distribution, 1886.—(5) Notes on the Palæozoic Entomostraca. No. xxii. On some undescribed Species of British Carboniferous Ostracoda, 1886.—(6) On Ostracoda of the Carboniferous Formations of the British Isles, 1886. 8vo. Lond., 1886. **Prof. Rupert Jones.**

Journal of the East India Association. Vol. xix. nos. 1-5. 8vo. Lond., 1886-87. **E. I. Assoc.**

Journal of the National Fish Culture Association. Vol. i. nos. 1 & 2. 8vo. Lond., 1887. **J. Willis Bund.**

Kerner, A. Schedæ ad Floram Exsiccatam Austro-Hungaricam. Nos. 1-4. 8vo. Vindobonæ, 1881-1886. **Author.**

Kidston, R. (1) Notes on Fossil Plants collected by Mr. R. Dunlop, Airdrie, from the Lanarkshire Coal-field. 8vo. Glasgow, 1886.—(2) On a new Species of *Psilotites* from the Lanarkshire Coal-field. 8vo. Lond., 1886.—(3) On Fructification of some Ferns from Carboniferous Formation. 4to. Edinb., 1887.—(4) On the Species of the Genus *Palæoxyris*, Brongniart, occurring in British Carboniferous Rocks. 8vo. Edinb., 1886. **Author.**

Klein, Sydney T. Thirty-six Hours' Hunting among the Lepidoptera and Hymenoptera of Middlesex. 8vo. Bath, 1887. **Author.**

Koch, G. Die geographische Verbreitung der europäischen Schmetterlinge. 8vo. Leipzig, 1854. (A. Grote's Library.) **Mrs. Stirling.**

Kölliker, A. (1) Das Karyoplasma und die Vererbung, 1886.—(2) Der jetzige Stand der morphologischen Disciplinen mit Bezug auf allgemeine Fragen. 8vo. Jena, 1887.—(3) Ueber den feineren Bau des Knochengewebes, 1886. **Author.**

Küchenmeister (Dr. F.) und Dr. F. A. Zurn. Die Parasiten des Menschen. 2te Auflage, Lief. 1-3. 8vo. Leipzig, 1878-1881. **F. Crisp.**

Kurtz, Dr. Federico. Informe Preliminar de un Viaje Botanico. 8vo. Buenos Aires, 1887. **Author.**

Lankester, Prof. E. Ray. Notes on Embryology and Classification for the use of Students. 8vo. Lond., 1877. (A. Grote's Library.) **Mrs. Stirling.**

Laporte, fils, Ernest. Faune Ichthyologique du Département de la Gironde. 8vo. Bordeaux, 1884. (A. Grote's Library.) **Mrs. Stirling.**

Latreille, P. A. Cours d'Entomologie. 8vo. Paris, 1831. (A. Grote's Library.) **Mrs. Stirling.**

Lawes, Sir J. Bennet. Memoranda of Origin, Plan, and Results of Field and other Experiments, conducted on the Farm and in the Laboratory at Rothamsted, Herts. 4to. Lond., 1886. **Author.**

Layard, E. L. Birds of South Africa. 8vo. Cape Town, 1867. (A. Grote's Library.) **Mrs. Stirling.**

Lea, Isaac. Index to Vols. i. to xi. of Observations on the Genus *Unio*. fol. Philadelphia, 1867. **Royal Society.**

Leeds. Transactions of the Leeds Naturalists' Club and Scientific Association for 1886. 8vo. Leeds, 1886. **Club.**

Lees, W. U. Report on the Cultivation and Propagation of Chinchonæ. 8vo. Calcutta, 1868. (A. Grote's Library.) **Mrs. Stirling.**

Lendenfeld, Dr. R. von. (1) Der gegenwärtige Stand unsrer Kenntniss der Spongien. 8vo. Jena.—(2) On the Systematic Position and Classification of Sponges. 8vo. Lond., 1886. **Author.**

Leuckart, Dr. Rudolph. Die Parasiten des Menschen und die von ihnen herrührenden Krankheiten. 2te Auflage, 1ter Band, Lief. 1 & 2. 8vo. Leipzig und Heidelberg, 1879-1881. **F. Crisp.**

Lindberg, Dr. S. O. Sur la Morphologie des Mousses. 8vo. 1886. **Author.**

Lindley, Prof. Folia Orchidacea. Vol. i. 8vo. Lond., 1852-1855. (A. Grote's Library.) **Mrs. Stirling.**

Liverpool Flora. List by L. Naturalists' Field Club. 8vo. Liverpool 1872–76. **Dr. Masters.**

Lloyd, J. U., and C. G. Drugs and Medicines of North America. Vol. ii. 8vo. Cincinnati, 1886. **Authors.**

Lloyd, W. A. (1) Aquaria and its Contents of Fish, Insect, and Plant. How to Manage. 5th ed. 8vo. Lond., 18—.—(2) Official Hand-book to the Marine Aquarium of the Crystal Palace Aquarium Company. 3rd ed. 8vo. 1872.—(3) Some Observations on Public Aquaria. 12mo. Lond., 1874.—(4) Supplement to a List of whatever relates to Aquaria; containing Practical Instructions for their Management. 8vo. 1860. **Dr. J. Millar.**

Lockwood, Prof. S. Raising Diatoms in the Laboratory. 8vo. New York, 1886. **Author.**

Lydekker, R. Catalogue of Fossil Mammalia in British Museum. Pt. 4. Order Ungulata, Suborder Proboscidea. 8vo. Lond., 1886. **Trustees Brit. Mus.**

McCoy, F. Prodromus of the Zoology of Victoria. Decades xii., xiii. Roy. 8vo. Melbourne, 1886. **P. H. Macgillivray.**

Macfie, M. Vancouver Island and British Columbia. 8vo. Lond., 1865. (A. Grote's Library.) **Mrs. Stirling.**

McGibbon, J. Catalogue of Plants in the Botanic Garden, Cape Town, Cape of Good Hope. 8vo. Cape Town, 1858. (A. Grote's Library.) **Mrs. Stirling.**

Macgillivray, P. H. (1) Catalogue of the Marine Polyzoa of Victoria. 8vo. 1887.—(2) Descriptions of new, or little known, Polyzoa. Parts 10–12. 8vo. Sydney, 1886–87. **Author.**

McIntosh, Prof. W. C. (1) Additional Remarks on the External Aspect of the Tunny.—(2) On the British Weevers, the Bib, and the Poor-Cod. 8vo. Lond., 1886. –(3) Notes from the St. Andrew's Marine Laboratory (under the Fishery Board for Scotland).—(4) Ditto, No. iv. On a Male Tunny (*Orcynus thynnus*, L.).—(5) Ditto, No. v. On the Paternal Instincts of *Cyclopterus lumpus*, L.—(6) Ditto, No. vi. On the very young Cod and other Food Fishes. 8vo. Lond., 1886.—(7) Report of the St. Andrew's Marine Laboratory, No. 3. 8vo. Aberdeen, 1885. **Author.**

McLachlan, R. Presidential Address, Entomological Society, January 1887. 8vo. Lond., 1887. **Author.**

Macoun, J. Catalogue of Canadian Plants. Pt. 3. Apetalæ. 8vo. Montreal, 1886. **Canadian Survey.**

Magalhães, Dr. Pedro S. De. Descripção de Uma Especie de Filarias Encontradas no Coração Humano, Filariose de Wucherer. (Medicina Rio de Janeiro, 1886.) 8vo. Rio de Janeiro, 1886. **Author.**

Maisonneuve, Paul. Thèses $1^{e}$ Thèse: Ostéologie et Myologie du *Vespertilio murinus*. $2^{e}$ Thèse: Propositions données par la Faculté. 8vo. Paris, 1878. **Dr. J. Murie.**

Maitland, Sir J. Ramsay Gibson. The History of Howietoun. Vol. i. roy. 8vo. Stirling, N.B., 1887. **Author.**

Manley, J. J. Notes on Fish and Fishing. 8vo. Lond., 1881. (A. Grote's Library.) **Mrs. Stirling.**

Mansill, R. (1) Six Titles of Natural Law. 8vo. Lond., 1871.—(2) Unusual Changes in Natural Elements. 8vo. Lond., 1871. **Dr. J. Murie.**

Mantell, G. A. Petrifactions and their Teachings. 8vo. Lond., 1851. (A. Grote's Library.) **Mrs. Stirling.**

Markham, C. R. (1) Botanical Descriptions of the Species of Cinchonæ. 8vo. Calcutta, 1861.—(2) Narratives of the Mission of George Bogle to Tibet, and of the Journey of Thomas Manning to Lhasa. 8vo. Lond., 1876. (A. Grote's Library.) **Mrs. Stirling.**

Marriott, W. On the Frost of December 1879 and January 1881 over the British Isles. 8vo. Lond., 1880–81. **Rev. G. Henslow.**

Mason, Rev. F. Burmah, its People and Natural Productions. 8vo. Rangoon, 1860. (A. Grote's Library.) **Mrs. Stirling.**

Massachusetts Horticultural Society. (1) Catalogue of the Library.—(2) Transactions for 1873–1886. 8vo. Boston, 1873–86. **Mass. Hort. Soc.**

Meteorological and Magnetical Observations of the International Polar Expeditions; 1882–83, Fort Rae. 4to. Lond., 1886. **Meteorol. Soc.**

Metschnikoff, Elias. (1) Medusologische Mittheilungen. 8vo. Wien, 1886.—(2) Vergleichend-embryologische Studien. 8vo. Leipzig, 1886. **Author.**

Miall, L. C. Descriptive Guide to the Collection of British Birds. 8vo. Leeds, 1874. (A. Grote's Library.) **Mrs. Stirling.**

Miall, L. C., and A. Denny. The Structure and Life-History of the Cockroach. 8vo. Lond., 1886. **Prof. Miall.**

Mivart, Prof. St. George. The Common Frog. 8vo. Lond., 1874. **Dr. J. Murie.**

Moore, F. Lepidoptera of Ceylon. Vol. iii. part 12. 4to. Lond., 1886. **Govt. of Ceylon.**

Morris, D. The Colony of British Honduras, its Resources and Prospects. 8vo. Lond., 1883. **Author.**

Morse, Edward S. Ancient and Modern Methods of Arrow-Release. 8vo. Salem, 1885. **Author.**

Mueller, Baron Ferd. von. Description and Illustrations of the Myoporinous Plants of Australia. II. Lithograms. 4to. Melbourne, 1886. **Victorian Govt.**

——. Index Perfectus ad Caroli Linnæi Species Plantarum. 8vo. Melbourne, 1880. **Author.**

Mukharji, T. N. (1) Descriptive Catalogue of Indian Produce contributed to the Amsterdam Exhibition, 1883. 8vo. Calcutta, 1883.—(2) Handbook of Indian Products. 8vo. Calcutta, 1883. **Author.**

Murphy, M. Reminiscences of Tasmania. 8vo. Christchurch (N. Z.), 1886. **Author.**

Naturalist. Vols. xi. & xii., 1886–87. 8vo. Lond., 1887. **Editors.**

Nature. Vols. xxxiv., xxxv. 4to. Lond., 1886–87. **A. Macmillan.**

Nevins, Dr. J. Birkbeck. (1) On Nature and Structure Fruit of the Cruciferæ. 8vo, 1867.—(2) On Physical Difficulties in Construction of Proposed Maritime Canal through the Jordan Valley. 8vo, 1883.—(3) On Recent Plagues in Cyprus and in North America. 8vo, 1886.—(4) The Introduction of Peruvian Bark Trees and present state of Cultivation in India. 8vo. Liverpool, 1884. **Author.**

Newton, Prof. Alfred, and J. W. Clark. The Woodwardian Professor and the Sedgwick Memorial Museum. 8vo. Cambridge, 1887. **A. Newton.**

Newton, E. T. A Classification of Animals. 8vo. London, 1887. **Author.**

Norske Nordhavs-Expedition, 1876–78. XV. Zoologi, ved Prof. G. O. Sars; Crustacea, ii. 1886.—XVII. Zoologi, ved Dr. D. C. Danielssen; Alcyonida. 1887.—XVIII. A., XVIII. B. Meteorologi, ved Prof. Mohm: Dybder Temperatur og Stromninger. 1887. fol. Christiania, 1886–87. **Norwegian Govt.**

Ochsenheimer (Ferd.), und F. Treitschke. Die Schmetterlinge von Europa. 8 vols., (1–10). 8vo. Leipzig, 1807–1834. (A. Grote's Library.) **Mrs. Stirling.**

Official Guide to the Museums of Economic Botany, Royal Gardens, Kew. (Revise.) Nos. 1 & 3. 2nd ed. fol. Lond., 1886. **Director Kew.**

Oliver, F. W. Ueber Fortleitung des Reizes bei reizbaren Narben. 8vo. Berlin, 1887. **Author.**

Osten-Sacken, Baron C. R. (1) Correction to my article on Apiocera. 8vo. Berlin, 1886.—(2) Characters of the Larvæ of Mycetophilidæ. Reprint. 8vo. Heidelberg, 1886.—(3) On Mr. Portchinski's publications on the Larvæ of Muscidæ. 8vo. Berlin, 1887.—(4) Studies on Tipulidæ. Part 1. 8vo. Berlin, 1886. **Author.**

Paolucci, Prof. L. Sulla Fillossera in Lombardia. 4to. Ancona, 1880. **Arthur Bennett.**

Pascoe, F. P. Analytical Lists of the Classes, Orders, &c. of the Animal Kingdom. 12mo. Lond., 1886. **Author.**

Patterson, R. Lloyd. The Birds, Fishes, and Cetacea of Belfast Lough. 8vo. Lond., 1880. **Author.**

Payot, Venance. Florule Bryologique, ou Guide du Botaniste au Mont Blanc. 8vo. Genève, 1886. **Author.**

Pelzeln, Aug. von. Ueber die Malayische Säugethier-Fauna. 4to. Wien, 1876. (A. Grote's Library.) **Mrs. Stirling.**

Petherick, E. A. Catalogue of the York Gate Library, formed by Mr. S. William Silver. Large 8vo. Lond., 1886. **S. W. Silver.**

Petterd, W. F. Monograph of the Land Shells of Tasmania. 8vo. Tasmania, 1879. **Mr. J. Brazier.**

Peyer, Joh. Conrad. Merycologia sive de Ruminantibus et Ruminatione Commentarius. 4to. Basileæ, 1685. **Royal Society.**

Phillips, Prof. J. Life on the Earth. 8vo. Lond., 1850. **Dr. J. Murie.**

Plateau, Félix. (1) Une Expérience sur la Fonction des Antennes chez la Blatte (*Periplaneta orientalis*). 8vo. Brussels, 1886.—(2) Palpes des Myriopodes et des Aranéides. 8vo. Menlan, 1886. **Mrs. Cobbold.**

Plowright, Chas. B. On Mildews of Wheat. 8vo. Lond., 1882. **Dr. Masters.**

Porter, —. How to grow Potatoes with success for Exhibition. 8vo. 1879. **Dr. Masters.**

Powell, Rev. Thos. (1) A Samoan Tradition of Creation and the Deluge. 8vo. Lond., 1886.—(2) Manual of Zoology in the Samoan Dialect. 8vo. Lond., 1887. **Author.**

Preudhomme de Borre, A.—(1) Anomalie Observée chez un *Leucopholis rorida*. 8vo. Bruxelles, 1886.—(2) Discours du Président de la Société Entomologique de Belgique. 8vo. Bruxelles, 1886.—(3) Note sur le Genre *Ectinohoplia*, Redtenbacher. 8vo. Bruxelles, 1886. **Author.**

Prince, Edward E. (1) Early Stages in the Development of the Food Fishes.—(2) On Nest and Development of *Gastrosteus spinachia* at St. Andrew's Marine Laboratory (1885).—(3) On Presence of Oleaginous Spheres in the Yolk of Teleostean Ova. 8vo. Lond., 1886. **Prof. McIntosh.**

Proceedings of Belfast Natural History and Philosophical Society for 1871–1882. 8vo. Belfast, 1873–1882. And Report and Proceedings for 1882–1886. 8vo. Belfast, 1883–1886. **A. Lloyd Patterson.**

Pye-Smith, Dr. T. H. Catalogue, Preparations of Comparative Anatomy in Museum of Guy's Hospital. 8vo. Lond., 1874. **Dr. J. Murie.**

Radlkofer, Prof. L. (1) Conspectus Sectionum Specierumque Generis *Serjaniæ*, auctus. 4to. Monachii, 1886.—(2) Ergänzungen zur Monographie der Sapindaceen-Gattung *Serjania*. 4to. München, 1886.—(3) Neue Beobachtungen über Pflanzen mit durchsichtig punktirten Blätter und Systematische Uebersicht solcher. 8vo. München, 1886.—(4) Rede. Ueber die Arbeit und das Wirken der Pflanze. 8vo.—(5) Ueber die durchsichtigen Punkte und andere anatomische Charactere der Connaraceen. 8vo.—(6) Ueber fischvergiftende Pflanzen. 8vo. **Author.**

Ramsay, E. P. Catalogue of Echinodermata in the Australian Museum. Part 1. Sydney, 1885. **Trustees Austral. Mus.**

Rapport met bijlagen over eenige buitenlandsche musea van natuurlijke Historie. 8vo. Leiden, 1878. **Dr. J. Murie.**

Rathke, Dr. H. Ueber den Bau und die Entwickelung des Brustbeins der Saurier. 4to. Königsberg, 1853. **Royal Society.**

Ratte, A. Felix. Descriptive Catalogue (with Notes) of the General Collection of Minerals in the Australian Museum. 8vo. Sydney, 1885. **Trustees Austral. Mus.**

Ray, John. Philosophical Letters between Mr. Ray and several of his Correspondents; to which are added those of Francis Willughby. 8vo. Lond., 1718. **Royal Society.**

Reid, Clement. (1) Norfolk Amber. 1886.—(2) On the Flora of the Cromer Forest-bed. 8vo., 1886. **Author.**

Report, Botanical Exchange Club of British Isles for 1885. 8vo. Manchester, 1886. **Chas. Bailey.**

Report of the British Association (Aberdeen). 8vo. Lond., 1885. **Council Brit. Assoc**

Report Ealing Micros. & Nat. Hist. Soc. 1885–86. 8vo. Ealing, 1886. **Rev. G. Henslow.**

Report of Department of Agriculture, Statistics, and Health of Province of Manitoba for 1883. 8vo. Winnipeg, 1884. **R. Miller Christy.**

Report of Fruit Growers' Association of Ontario for 1884. 8vo. Toronto, 1885. **Horace Pearce.**

Report, Mineral Statistics of Victoria for 1885. fol. Melbourne, 1886. **Victorian Govt.**

Report of the Severn Fishery District. 8vo. Worcester, 1887. **J. Willis Bund.**

Report of Secretary for Agriculture. 8vo. Melbourne, 1875. **Dr. Masters.**

Report on Coffee Cultivation in Dominica. fol. Trinidad, 1885. **Dr. Masters.**

Report on Disease among Salmon in the Tweed, Eden, and other Rivers in England and Scotland. 8vo. Lond., 1880. **Dr. Masters.**

Report on Government Botanical Gardens at Sahâranpur and Mussoorie for 1885. fol. Allahabad, 1885 & 1886. **Dr. Cleghorn.**

Report on Horticultural Gardens, Lucknow. **Dr. Cleghorn.**

Report on Indian Wheat, by Dr. Forbes Watson. fol. Lond., 1879. **Dr. Masters.**

Report, Peabody Academy of Science. (18th.) 8vo. Salem, 1886. **Academy.**

Report by Director of Public Works, on the Public Works of the Colony, for the year 1885. fol. Perth, 1886. **W. Austral. Govt.**

Reports of Forest Department, Madras Presidency, 1884–85. fol. Madras, 1885. **Govt. of India.**

Reports of Public Gardens and Plantations of Jamaica. fol. Jamaica, 1880–82. **Dr. Masters.**

Reports, Royal Gardens, Kew, for 1866–1882. 8vo. Lond., 1867–83. (A. Grote's Library.) **Mrs. Stirling.**

Reports, Scientific Results, Exploring Voyage of H.M.S. 'Challenger.' 1873–76. Botany, Vols. i–ii.; Narrative, Vols. i–ii.; Physics and Chemistry, Vol. i.; Zoology, Vols. i.–xix. 4to. Lond., 1880–87. **H.M. Govt.**

Reuss, E. L'Exposition Forestière Internationale de 1884 a Édimbourg (Écosse). 8vo. Paris, 1886. **Dr. Cleghorn.**

Review of Forest Administration in British India for 1885–85. fol. Simla, 1886. **Govt. of India.**

Richardson, Dr. B. W. The Asclepiad. Vol. iii. 8vo. Lond., 1887. **Author.**

Ridley, H. N. On the Monocotyledonous Plants of New Guinea collected by Mr. H. O. Forbes. 8vo. Lond., 1886. **Author.**

Ridley, S. O. Polyzoa. (1) Cœlenterata and Spongiida 'Alert' Survey. 8vo. 1881.—(2) On the Geographical Distribution of Corals. 8vo.—(3) On the Genus *Plocamia*, Schmidt. 8vo. 1881. And 10 other pamphlets. **Author.**

Ridley, Stuart O., and A. Dendy. Preliminary Report on the Monaxonida collected by H.M.S. 'Challenger.' 8vo. Lond., 1886. **S. O. Ridley.**

Rivers, Thos. The Orchid-house. 5th ed. 8vo. Lond., 1858. (A. Grote's Library.) **Mrs. Stirling.**

Rodd, E. H. Birds of Cornwall and Scilly Islands. Ed., with Introduction, by J. E. Harting. 8vo. Lond., 1880. (A. Grote's Library.) **Mrs. Stirling.**

Roper, F. C. S. List of the Natural History of Eastbourne and its Vicinity. 8vo. Eastbourne, 1873. **Author.**

Roth, H. Ling. On the Origin of Agriculture. 8vo. Lond., 1886. **Author.**

Routledge, Thos. Bamboo and its Treatment. 8vo. Claxheugh, Sunderland, 1879. **Dr. Masters.**

Royal Botanic Society of London. Quarterly Record. January, February, March 1887. **Society.**

Royal Gardens, Kew. Bulletin of Miscellaneous Information. Nos. 1–4. 8vo. Lond., 1887. **Director Roy. Gard.**

Royal Society of South Australia. Transactions and Proceedings and Report. Vol. viii. 8vo. Adelaide, 1886. **Society.**

Russell, J. Cook. Geological History of Lake Lahontan. Vol. xi. of Monographs, U.S. Geological Survey. 4to. Washington, 1885. **U.S. Geol. Survey.**

Saint-Fargeau, Lepeletier de. Histoire Naturelle des Insectes. Hyménoptères. Tomes 1–4. 8vo. Paris, 1836–46. (A. Grote's Library.) **Mrs. Stirling.**

Saint-Lager, Dr. Histoire des Herbiers. 8vo. Paris, 1885. **Author.**

Saunders, Wm. (1) Annual Address, President of Entomological Society of Ontario. 8vo. Ontario, 1885.—(2) Annual Address, President of Fruit-Growers' Association of Ontario. 8vo. Ontario.—(3) Insects Injurious to Fruits. 8vo. Philadelphia, 1883. **Author.**

Scharff, R. On *Ctenodrilus parvulus.* 8vo. Lond., 1887. **Author.**

Schlagintweit-Sakunlünski, Herm. von. Bericht über Anlage des Herbariums wahrend der Reisen nebst Erläuterung der topographischen Angaben. 4to. München, 1876. (A. Grote's Library.) **Mrs. Stirling.**

Schlich, Dr. W. (1) Afforestation in Great Britain and Ireland. 8vo. Roorkee, 1886. **Author.**

—— (2) Review of Forest Administration in the several Provinces under the Government of India for 1880–1882. fol. Calcutta, 1882–83. **Dr. Masters.**

Schobinger-Pfister, J. Taschenbuch für reisende Botaniker un Kanton Luzern. Sm. 8vo. Luzern, 1866. (A. Grote's Library.) **Mrs. Stirling.**

Schübeler, Dr. F. C. Viridarium Norvegicum. Norges Væxtrige et Bidrag til Nord-Europas Natur- og Culturhistorie. 4to. Christiania, 1885. **Author.**

Science Gossip. Vol. xxii. 8vo. Lond., 1887. **Editor.**

Sclater, P. L. Catalogue of Birds in British Museum. Vol. xi. 8vo. Lond., 1886. **Trustees Brit. Mus.**

Seebohm, H. Physiological Selection. 8vo. Lond., 1886. **Author.**

Seeley, Prof. H. G. Freshwater Fishes of Europe. 8vo. Lond., 1886. **Cassell & Co.**

Sherborn, C. D., and F. Chapman. On some Microzoa from the London Clay exposed in the Drainage-works, Piccadilly, London, 1885. 8vo. Lond., 1886. **Authors.**

Simmonds, P. L. (1) A Dictionary of Useful Animals and their Products. 8vo. Lond., 1886.—(2) Animal Food-resources of Different Nations. 8vo. Lond., 1885. **Author.**

Smith, J. Records of the Royal Botanic Gardens, Kew. 8vo. Lond., 1880. **Author.**

Smitt, F. A. Kritisk förteckning öfver de i riksmuseum befintliga Salmonider. fol. Stockholm, 1886. **Author.**

Stabile, Abbé Jos. Fossiles des Environs du Lac de Lugano. 8vo. Lugano, 1861. (A. Grote's Library.) **Mrs. Stirling.**

Stebbing, Thos. R. R. Essays on Darwinism. 8vo. Lond., 1871. (A. Grote's Library.) **Mrs. Stirling.**

Stirling, Jas. Hutchison. As Regards Protoplasm, in Relation to Professor Huxley's Essay on the Physical Basis of Life. 8vo. Edinb., 1869. (A. Grote's Library.) **Mrs. Stirling.**

Strasburger, E. Ueber fremdartige Bestäubung. 8vo. Berlin, 1886. **Author.**

Studies in Microscopical Science. Vol. iv. 8vo. Lond., 1886. **W. C. Cole.**

Sundevall, C. J. Die Thierarten des Aristoteles von den Klassen der Säugethiere, Vogel, Reptilien und Insekten. 8vo. Stockholm, 1863. (A. Grote's Library.) **Mrs. Stirling.**

Swainson, W. (1) Animals in Menageries. 8vo. Lond., 1838.—(2) Discourse on Natural History. 8vo. Lond., 1834.—(3) Natural History and Classification of Birds. 2 vols., i. & ii. 8vo. Lond., 1836–37.—(4) Natural History and Classification of Quadrupeds. 8vo. Lond., 1835.—(5) Natural History of Fishes, Amphibians, and Reptiles. 2 vols., i. & ii. 8vo. Lond., 1838–39. —(6) On Habits and Instincts of Animals. 8vo. Lond., 1840.—(7) Treatise on Geography and Classification of Animals. 8vo. Lond., 1835.—(8) Treatise on Malacology. 8vo. Lond., 1840. (A. Grote's Library.) **Mrs. Stirling.**

Swainson, W., and W. E. Shuckard. On the History and Natural Arrangement of Insects. 8vo. Lond., 1840. (A. Grote's Library.) **Mrs. Stirling**

Swammerdam, Dr. J. The Book of Nature, or the History of Insects. Transl. by Thos. Floyd. fol. Lond., 1758. (A. Grote's Library.) **Mrs. Stirling.**

Tassy, G. de. Le Langage des Oiseaux. 1re div., 2me ed. 8vo. Paris, 1856–57. (A. Grote's Library.) **Mrs. Stirling.**

Tatsuyuki, Ohkura. "Suizoku Shashin," or Illustrations of Fishes. 2 vols., text and plates. 4to. Yedo (Tokio), 1857. **Tokutaro Ito.**

Tepper, J. G. O. Descriptive List of Native Plants of South Australia. 8vo. Adelaide, 1886. **Author.**

Theobald, W. Catalogue of the Land and Freshwater Shells of British India. 4to. Calcutta, 1876. (A. Grote's Library.) **Mrs. Stirling.**

Thudichum, Dr. J. L. W. Report on Parasites. 8vo. Lond., 1865. **Dr. J. Murie.**

Thwaites, G. H. K., and J. D. Hooker. Enumeratio Plantarum Zeylaniæ. 8vo. Lond., 1864. (A. Grote's Library.) **Mrs. Stirling.**

Timehri. Vol. v. pt. 1. 8vo. Demerara, 1886. **E. F. im Thurn.**

Tōkyō, Japan. College of Science, Imperial University. Vol. i. pts. 1, 2. 8vo. Tōkyō, 1886. **College.**

Transactions and Reports of Fruit-Growers' Association and International Show Society of Nova Scotia for 1883, 1884, 1885, 1886. 8vo. Halifax, 1883–86. **Horace Pearce.**

Transactions of Yorkshire Naturalists' Union. Part 9. 8vo. Leeds, 1886. **W. Denison Roebuck.**

Trimen, Roland. Rhopalocera Africæ Australis. Parts 1 & 2. 8vo. Cape Town, 1862–1866. (A. Grote's Library.) **Mrs. Stirling.**

Tryon, Jun., G. W. Publications of Isaac Lea on Recent Conchology. 8vo. Philadelphia, 1861. **Royal Society.**

Veitch & Sons, Jas. A Manual of Orchidaceous Plants. Part 1. *Odontoglossum.* 8vo. Lond., 1887. **H. J. Veitch.**

Vejdovsky, Dr. F. Beiträge zur Vergleichenden Morphologie der Anneliden. fol. Prag, 1879. **Royal Society.**

Veniukof, Capt. V. M. The Russians in Central Asia. 8vo. Lond., 1865. (A. Grote's Library.) **Mrs. Stirling.**

Vidal y Soler, Don Seb. Revision de Plantas Vasculares Filipinas. 8vo. Manila, 1886. **Author.**

Vines, S. H. Lectures on the Physiology of Plants. 8vo. Cambridge, 1886. **Author.**

Wainio, Dr. E. Revisio Lichenum in herbario Linnæi asservatorum. 8vo. Helsingfors, 1886. **Author.**

Walsh, E. The Dog in Health and Disease by Stonehenge. 8vo. Lond., 1859. (A. Grote's Library.) **Mrs. Stirling.**

Waterhouse, F. H. Catalogue Library Zoological Society. 4th ed. 8vo. Lond., 1887. **Author.**

Waterton, Chas. Wanderings in South America. 4th ed. 8vo. Lond., 1839. **J. C. Galton.**

Webster, A. D. British Orchids. 8vo. Bangor, 1886. **Author.**

Wharton, H. Thornton. A List of Birds. 8vo. Lond., 1877. (A. Grote's

Wilson, Jun., Wm. Practical Observations on Agricultural Grasses and other Pasture Plants. 8vo. Aberdeen, 1886. **Mrs. Farquharson.**

Wise, T. A. History of Paganism in Caledonia. 4to. Lond., 1884. **Author.**

Wood, Rev. J. G. Fresh- and Salt-water Aquariums. 8vo. Lond. **Dr. J. Millar.**

Woodward, H. Guide to Exhibition Galleries of Department of Geology and Palæontology in Brit. Mus. 8vo. Lond., 1886. **Trustees Brit. Mus.**

Woolls, W. The Plants of New South Wales. 8vo. Sydney, 1885. **Sir J. Lubbock.**

Worsley-Benison, H. W. S. On the Power of Movement in Plants. 8vo. Bath, 1886. **Author.**

Zeiller, R. On *Ulodendron* and *Bothrodendron*. 8vo. Paris, 1885. **Author.**

Zoologist, 1886–87. 8vo. Lond., 1887. **T. P. Newman.**

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Godwin-Austen, Lieut.-Col., withdrawn, 17.
Grabham, M. C., elected, 9.
Grote, A., bequest of books, 29; deceased, 17; obituary, 40.

Haddon, Prof., Actiniæ Mergui Exped., 22.
Halford, F. M., elected, 20.
Hanbury, F. J., Primulas from Saffron Walden shown, 16.
Hance, H. F., deceased, 17; obituary, 40, 41.
Harting, J. E., elected Auditor, 14.
Heath, E. A., Stormy Petrel, *Procellaria pelagica*, exhib., 6.
Hemsley and Forbes, Index Floræ Sinensis, Part III., 22.
Henry, I. A., obituary, 42.
Henslow, Rev. G., Transpiration as Function of Living Protoplasm, 21.
Hermann's Ceylon Herbarium and Linnæus's Flora Zeylanica (Trimen), 5.
Hincks, Rev. T., Hydroida and Polyzoa of Mergui, 8.
H.R.H. Prince of Wales, elected Honorary Member, 7.
Hoek, Dr. P., on *Dichelaspis pellucida*, from Hydrophid, Mergui, 11.
Holmes, Rev. E. A., deceased, 17.
Holmes, E. M., abnormal Lemons exhib., 10; *Dichopsis*, affording gutta-percha, shown, 14; *Lycoperdon echinatus*, Pers., exhib., 2; *Thorea* from Borneo and Sumatra, exhib., 14.
Hopkinson, J., Scrutineer, 19.
Howes, Prof. G. B., elected to Council, 19.
Huxley, Prof. T. H., observations on Gentians, 13.

*Hydnora abyssinica*, 4; *africana*, 4; *bogotensis*, 4.
Hydroida and Polyzoa, Mergui (Hincks), 8.

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Ito, Tokutaro, *Balanophora* new to Japan, 22; Berberidearum Japoniæ, 2; elected, 4; Japanese work on Fishes exhib., 21.
Ito, T., & Dr. Spegazzini, Fungi Japonici nonnulli, 22.

Jackson, B. Daydon, re-elected Secretary, 19.
Jackson, H., elected, 13.
James, H. B., elected, 20.
Japanese vol. Botany shown (Dyer), 6.
Johnson, Rev. A., drawings of *Begonia Veitchii* exhib., 10.
Justen, F., elected, 6.

Kent, A., elected Associate, 14.
King, Dr., observations on *Ficus*, 13.
Kirby, Rev. W., portrait of, 6, 29.
Klein, S. T., elected, 12.
Knight, T. A., engraving of, 29.
Knox, A. E., deceased, 17; obituary, 41.
Kohima and Munipore, Flora (Clarke), 22.
Krause, F., elected, 4.

Lascelles, F. M., elected, 5.
*Laurus nobilis*, 10
*Lavandula lunata*, 5.
Leaves and Fibres of Agave exhib. (Morris), 6.
Leighton, Rev. W. A., withdrawn, 17.
Lemons, irregularly developed, exhib. (Holmes), 10.
Lendenfeld, R. von, elected, 5.
Letter, Rev. M. J. Berkeley, concerning death of Mr. C. E. Broome, 5.
Library, accessions to, 17; books bound, 19; donations to, 43.
*Liparis*, 24.
Loch-Leven Trout (*Salmo levenensis*) (Day), 5.
*Lodoicea seychellarum*, 6.
*Lophopus*, on genus (Ridley), 2, 26.
Lowne, B. T., photographs retina of Insects exhib., 8.
Lubbock, Sir J., comm. on Ephemeridæ (Rev. A. E. Eaton), 4; Phytobiological Observations, Part II., 11; specimens of *Peziza coccinea* from Ilfracombe exhib., 11; removed from Council, 19.
*Lumpenus lampetriformis*, 25.
*Lycoperdon echinatum* exhib. (Holmes), 2.

MacLeay, A., MS. and Correspondence, 6.
MacLeay, Sir G., present. portrait of Rev. W. Kirby and MS. and Corresp. of his father, A. MacLeay, 6.
Macoun, Prof. J., remarks on Cones of Canadian Piceas, 1.
*Macrocystis*, preparations of its stem shown (Oliver), 21.
Maize from ancient grave at Ancon, Peru, exhib. (President), 7.
*Malaxis* and *Microstylis*, revision of genera (H. N. Ridley), 22.
Maries, C., elected, 12.
Marshall, Rev. E. S., elected, 12.
Massee, G., Fungoid Disease of *Colocasia* in Jamaica, 12.
Masson, F., portrait of (Carruthers), 7, 29.
Masters, Dr. M. T., elected to Council, 19; Floral Conformation of *Cypripedium*, 4; nom. Vice-Pres., 20.
Maw, G., drawing *Crocus karducharum* and *C. zonatus* shown, 9; elected Auditor, 14; *Narcissus cyclamineus* in flower, from Oporto, exhib., 9; photographs of Narcissi from Riviera exhib., 5; two Narcissi from Pyrenees shown, 11.
Meeting, Anniversary, 17.
Mergui, Actiniæ of (Haddon), 22; Alcyonaria of, 16; Annelids (Beddard), 22; *Brachyonychus* (Bates), 5; *Dichelaspis pellucida* (Hoek), 11; Gephyreans of (Selenka), 14; Hydroida and Polyzoa (Hincks), 8; Polyzoa and Hydroida (Hincks), 8.
Michael, A. D., annual statement of Accounts presented by, 16; *Argas* from Adelaide shown, 3; elected Auditor, 14.
*Microstylis* and *Malaxis*, revision of (Ridley), 22.
Millar, Dr. J., Special General Meeting to celebrate 100th Anniversary, motion by, 19.
Milne-Edwards, Prof. H., death of Foreign Member, 9.
Mivart, Prof. St. Geo. J., nom. Vice-Pres., 20.
Moa, feathers of, exhib. (Sir W. Buller), 22.
Moore, Spencer, Influence of Light on Protoplasm, 21.
Moore, Thos., deceased, 17; obituary, 41, 42.
Morgan, R., elected, 12.
Morris, D., comm. Fungoid disease of *Colocasia* in Jamaica (Massee), 12;

leaves and fibres of Agave exhib., 6; photographs of Castillca Rubber-tree shown, 3; Scrutineer, 13.
Moseley, Prof., removed from Council, 19.
Mud-volcanoes, photo. exhib. (Sherring), 16.
Mukharji, T. N., elected, 6.
Munipore and Kohima, flora (Clarke), 22.
Munroe, Dr. H., deceased, 17; obituary, 42.
Murie, Dr. J., comm., on nat. hist. gen. *Dero* (Bousfield), 2; comm., on Variation in Plants and Animals (Geddes), 14.
Murray, G., *Rhipilia* from Grenada shown, 4.
Murray, J., remarks on *Ceratium*, 1.
Musson, C. T., Blackthorn, with proliferation of branchlets, shown, 4.

*Narcissus albicans*, 11; *Broussonettii*, 5; *calathinus*, 15; *cernuus*, 11; *cyclamineus*, 9; *elegans*, 5; *hispanicus minor*, 9, var. *luteus*, 9, var. *cyclamineus*, 9; *moschatus*, 11; *nudiflorus*, 5; *reflexus*, 15; *serotinus*, 5; *Tazetta*, 5; *tortuosus*, 11; *triandrus*, 11, 15; *viridiflorus*, 5.
— *cyclamineus* in flower, from Oporto, exhib. (Maw), 9; *reflexus*, photos. exhib. (Brockbank), 15.
New African Orchid (Ridley), 21.
New species of *Brachyonychus*, Mergui (Bates), 5.
Nicholson, G., elected Associate, 6.
*Nicotiana glauca* exhib. (Stone), 16.
Nuclei in *Oscillaria* and *Tolypothrix* shown (Scott), 20, 22.

Obituaries, 33–42.
Oldfield, G. W., withdrawn, 17.
Oliver, F. W., elected, 6; preparations of *Macrocystis* shown, 21.
Orchid bigeneric hybrids (Rolfe), 16.
Orchid, new genus of, from St. Thomas (Ridley), 21.
*Oreodoxa regia*, 6.
Organisms, Firth of Clyde, shown, 1.
Osborne, W. D'Arcy Godolphin, white variety of *Crocus nudiflorus* from Biarritz shown, 2; white variety of Primrose exhib., 13.
*Oscillaria* and *Tolypothrix*, nuclei in, shown (Scott), 20.
Owen, Sir R., engraving of, 29.

*Pæonia coriacea*, 5
Perrin, G., elected, 14.
Peterson, Dr. E. E., withdrawn, 17.
*Peziza coccinea* from Ilfracombe exhib. (Lubbock), 11.
Piceas, remarks on cones of Canadian (Macoun), 1.
Phillips, F. W., withdrawn, 17.
Photographs, Bryozoa and Agave, shown (Waters), 22; Castilloa rubber-tree of Central America shown (Morris), 3; Gall-formation on *Scævola spinescens* exhib. (Tepper), 15; Narcissi from Riviera exhib. (Maw), 5; Retina of Insects exhib. (Lowne), 8.
Phytobiological Observations, Part II. (Lubbock), 11.
Plants and animals, variations in (Geddes), 14.
Plowright, C. B., experiments on British Heterœcious Uredines, 16.
*Posidonia caulinia* from Sicily shown (Pascoe), 2.
Potter, M. C., Algæ on Tortoise, 21.
Poulton, E. B., elected, 13.
Powell, Rev. Thos., deceased, 17.
Prentis, Chas., deceased, 17.
President, Address to Queen, 20; announced Prince of Wales on Roll of Society, 7; announced Sir G. MacLeay's presentations, 6; Annual Address, 19, 23–33; Letter from Sir F. Knollys, 9; Maize from ancient grave, Peru, exhib., 7; nomination of Vice-Presidents, 20; organisms from Clyde shown, 1; presented portrait of F. Masson, 7; proposed Prince of Wales as Hon. Member, 7; read letter from Rev. M. J. Berkeley, concerning death of Mr. Broome, 5; re-elected President, 9; remarks on work during Recess, 1.
Primrose, white variety of, exhib. (Osborne), 13.
*Primula elatior* × *vulgaris*, 16, × *veris*, 16; from Saffron Walden, shown (Hanbury), 16; *imperialis* exhib., 11.
Prince of Wales elected Honorary Member, 7.
*Prionus coriarius*, larva exhib. (Waller), 8.
Prior, Dr. R. C. A., Scrutineer, 19.
*Procellaria pelagica*, 6.
Pyralidæ from Punjaub (Lord Walsingham), 22.

Queen, Address to, 20.

*Ravenala madagascariensis*, 6

*Rhipilia* from Grenada shown (Murray), 4.
Ridley, H. N., drawings of *Coryanthes* shown, 3; new Orchid from St. Thomas, 21; revision of genera *Microstylis* and *Malaxis*, 22.
Ridley, S. O., genus *Lophopus* &c., 2, 21; Report Alcyonaria, Mergui, 16.
Roeper, Dr. J., death of Foreign Member, 9.
Rolfe, R. A., bigeneric Orchid hybrids, 16.
Romanes, G. J., smell in Dogs, 7.
Romilly, Hon. E., deceased, 17.
Roots and pods African *Strophanthus* exhib. (Christy), 4.
Royal Gardens, Kew, *Primula imperialis* from Japan exhib., 11.

*Salmo irridens* exhib. (Bund), 15.
Salmon Parr exhib. (Day), 2.
Samples of British pre-historic wheat exhib. (Carruthers), 7.
Samson, J., elected, 5.
Sander, F., elected, 5.
*Saxifraga biternata*, 5.
*Scævola spinescens*, galls on, 15.
Schweinfurth, Dr. G. A., nominated, 9, elected Foreign Member, 14.
Scortechini, Rev. B., deceased, 17.
Scott, D. H., nuclei in *Oscillaria* and *Tolypothrix* shown, 20, 22.
Secretaries elected, 19.
Seebohm, H., elected to Council, 19.
Seed-Cabinet Committee Report, 12.
Selenka, Prof. E., Gephyreans, Mergui, 14.
Sharp, Chas., withdrawn, 17.
Sherring, R. V., *Asplenium denticulatum*, from Jamaica, shown, 22; elected, 6; photo. mud-volcanoes Trinidad exhib., 16.
Siebold, Dr. C. Theod. von, death of Foreign Member, 9.
Sim, G., elected Associate, 5.
Simpson, W., Sketches Afghan Boundary exhib., 10.
Sladen, W. Percy, re-elected Secretary, 19.
Snuff-box, old wooden, shown (Musson), 4.
Solms-Laubach, Count H., nominated, 9; elected Foreign Member, 14.
South-African Botany, pt. iii. (Bolus), 22.
Southall, W., deceased, 17.
Specimens *Coryanthes* shown (Ridley), 3.
Spegazzini, Dr., and T. Ito, Fungi Japonici nonnulli, 22.
Spencer, W. I., elected, 14.
Stainton, H. T., seconded vote of thanks to President and Officers, 20.
Steindachner, Dr. F., nominated, 9; elected Foreign Member, 14.
Stimulation on Turgescent Vegetable Tissues (Bateson and Darwin), 8.
Stirling, Mrs., photograph of Dr. Stoliczka presented by, 29.
Stokoe, Dr. P. H., withdrawn, 17.
Stoliczka, Dr., photograph of, 29.
Stone, J. B., elected, 12.
Stone, J. H., *Nicotiana glauca* from Canaries exhib., 16.
Stormy Petrel (Mother Carey's Chick) exhib. (Heath), 6.
Story, E., deceased, 17; obituary, 42.
*Strophanthus hispidus* (African), 4.
Sutton, A. W., elected, 5.
*Stylidium Tepperiana*, exhib. (Tepper), 10.

Tait, A. W., elected, 12.
*Tapeinanthus humilis* shown, 5.
Tatsuyuki, O., Japanese work on Fishes by, exhib. (Ito), 21.
Tepper, J. G. O., new *Stylidium* from Kangaroo Island exhib. 10; photo. Gall-formation on *Scævola spinescens* exhib., 15.
*Thorea* from Borneo and Sumatra (Holmes), 14.
Thornhill, J., elected, 21.
Threlfall, W., elected, 21.
*Tolypothrix* and *Oscillaria*, nuclei in shown (Scott), 20.
Transpiration as Function of Living Protoplasm (Henslow), 21.
Treasurer, elected, 19; his statement, 18.
Treub, Dr. M., nominated, 9; elected Foreign Member, 14.
Trimen, Dr. H., Hermann's Ceylon Herbarium, and Linnæus's Flora Zeylanica, 5; resignation as Councillor, 12.
Trout, malformed, exhib. (Day), 13.
Tsanemassa, I., Japanese volume of Botany (Honzo Zufu) by, 6.
Tulasne, L. R., death of Foreign Member, 9.
Tyler, Chas., Scrutineer, 13.

Uredines, Exper. observations on British Heterœcious (Plowright), 16.

*Vaccinium intermedium*, new British Plant (Brown), 16; *Myrtillus*, 25; *Vitis-idæa*, 25.
Vaizey, J. R., Morphology Tissues Sporophore in Mosses, 8.

Vegetable Biology, III., Influence of Light on Protoplasm (Moore), 21.
Verbeck, R. D. M., photo. Peak of Rakata shown, 16.
*Vicia*, 27.
Vines, S. H., comm. Morphology Sporophore Mosses (J. R. Vaizey), 8.
Volcano of Krakatau, photo. shown (Verbeck), 16.

Wallace, R., elected, 20.
Walker, A. O., Crustacea from Singapore, 13.
Waller, J., block of Oak cont. living larva of Longicorn Beetle, *Prionus coriarius*, exhib., 8.
Walsingham, Lord, gregarious Pyralidæ from the Punjaub, 22; repairs in Datura exhib., 22.
Ward, Prof. H. Marshall, elected to Council, 19.
Waters, A. W., photos. Bryozoa and Agave shown, 22.
Wingate, G., elected, 9.
Weir, J. Jenner, seconded Address to the Queen, 19.
Weissmann, Dr. A., nominated, 9; elected Foreign Member, 14.
West Borneo, Ferns from (Baker), 22.
West, W., elected, 12.
Wheat, British pre-historic, exhib. (Carruthers), 7.
White Daffodil from Pyrenees shown, (Maw), 11.
White Stork, photos. shown (Bidwell), 13.
Wilson, C. W., elected, 5.
Wood, J. M., elected Associate, 14.

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